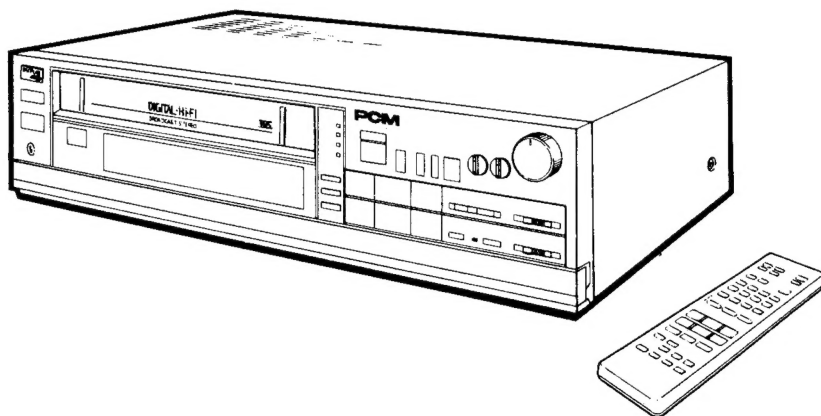


SERVICE DATA
FILE NO. 030-210

TOSHIBA

COLOR VIDEO CASSETTE RECORDER

DX-900, DX-900C



SPECIFICATIONS

GENERAL

Video recording system: Rotary 2-head helical scanning
Head configuration: 6-head rotary
(Dedicated heads for SP & EP)
Video signal: EIA standard NTSC color
Storage temperature: -20°C to $+60^{\circ}\text{C}$ (-4° to $+140^{\circ}\text{F}$)
Operating temperature: 5° to 40°C (41° to 104°F)
Antenna: 75-ohms external antenna terminal for VHF
300-ohms external antenna terminal for UHF
Channel coverage: VHF channels 2 — 13
UHF channels 14 — 83
CATV channels A — W, AA — ZZ,
AAA — CCC, A₁ — A₈
VHF output signal: Channel 3 or 4 (selectable)
66 dB μ , 75 ohms unbalanced
Power consumption: 38W
Weight: 22.9 lbs. (10.4 kg)
Dimensions: 16-15/16 x 4-1/2 x 15-1/4 inches (W.H.D)
(430 x 115 x 388mm) (W.H.D)

VIDEO

Input: VIDEO LINE IN:
Phono jack, 1.0V (p-p), 75-ohms,
unbalanced, sync, negative
Output: VIDEO LINE OUT:
Phono jack, 1.0V (p-p), 75-ohms,
unbalanced, sync, negative
Signal-to-noise ratio: [SP]: Better than 45 dB

AUDIO

Input: AUDIO LINE IN:
Phono jack, 47 k-ohms, -8 dBs,
unbalanced
Output: AUDIO LINE OUT:
Phono jack, less than 10 k-ohms,
 -6 dBs, unbalanced

	PCM	Hi-Fi
Frequency Characteristics	5 Hz — 20 kHz	20 Hz — 20 kHz
Dynamic Range	More than 86 dB	More than 90 dB
Distortion	Less than 0.007%	Less than 0.3%

TAPE TRANSPORT

Tape speed: SP 33.35 mm/sec., LP 16.67 mm/sec.,
EP 11.12 mm/sec.
Maximum recording-time: 480 min. with T-160 tape (EP mode)
Fast forward time: Within 6.0 min. (T-120)
Rewind time: Within 6.0 min. (T-120)

TIMER

Fluorescent digital display
Count down from AC-line frequency

Remote Control Unit

37 keys: 42 modes.
(with direct channel select)
Infrared Remote Control Operation

Caution: The unauthorized recording of television programmes
and other materials may infringe on the rights of others.

Design and specifications are subject to change without notice.

SAFETY NOTICE

SAFETY PRECAUTIONS

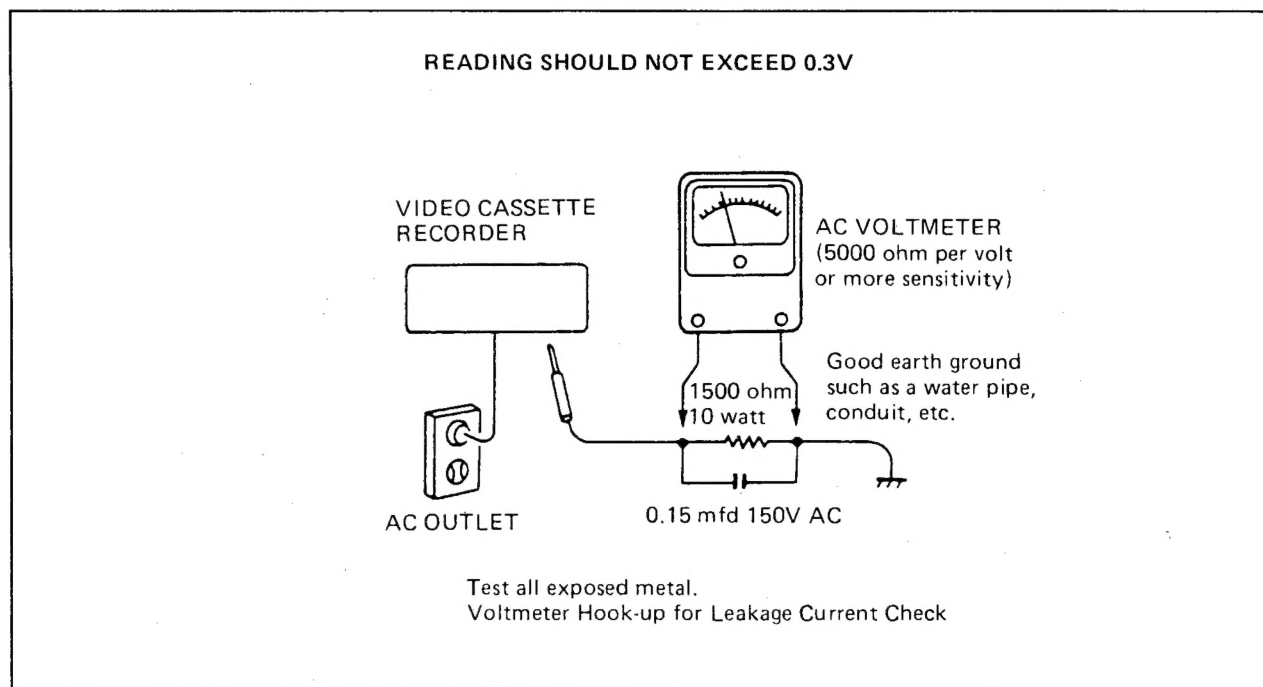
LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000 ohms per volt or more sensitivity.

Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 mfd 150V AC capacitor between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet, screwheads, metal overlays, control shafts, etc.).

Measure the AC voltage across the 1500 ohm resistor. The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3 volts. A reading exceeding 0.3 volts indicates that a dangerous potential exists, the fault must be located and corrected.

Repeat the above test with the VCR power plug reversed. NEVER RETURN A VCR TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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SECTION 1

GENERAL DESCRIPTION

OPERATING INSTRUCTIONS

Features

The TOSHIBA DX-900 is designed with a number of special features for your added enjoyment, including PCM recording and playback, digital graphic timer, multi digital playback, digital still and slow playback, TV still, and Hi-Fi recording system.

Other Special Features:

140 Channel Cable Compatible FS (Frequency Synthesized) Tuner

This FS tuner automatically selects with utmost accuracy all receivable channels without discriminating between UHF, VHF and CATV channels. During the automatic search the sound is muted.

14-Day, 4-Program Programmable Timer

With this handy function you can program your VCR to make up to four different kinds of unattended recording in a two-week period.

Auto-Rewind

All tapes are rewound automatically when the tape reaches its end during recording or playback.

Digital Still and Slow Playback

This function enables various kinds of visual playback with easy-to-use buttons aided by a digital memory circuit in both SP and EP modes. You can enjoy immediate still playback free of flicker and noise; smooth digital slow playback (at 1/4 the normal speed); and noise-free reverse slow playback (at 1/4 the normal speed).

Digital Double-Speed Playback

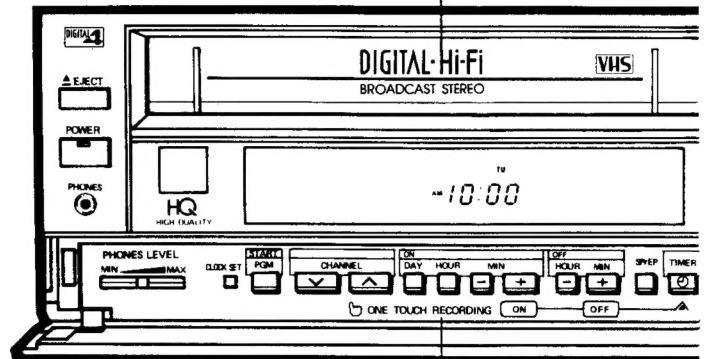
This function gives twice the normal speed playback with sound.

Multi Digital Playback

Three functions - multi still, multi memo and multi series - are provided to divide the screen into four parts by using the remote controls.

Auto Power On and Fully-Automatic Play

When a cassette is loaded, the power goes on automatically. When a pre-recorded tape (without safety tab) is loaded into the unit, not only does the power go on, but the Fully-Automatic Play function guides the tape through playback and rewind automatically. When the tape has been played and rewound, it is also ejected and the power turned off without you having to lift a finger.



One Touch Timer Recording

This convenient function lets you program the VCR in a matter of seconds for unattended recording of TV programs starting either immediately or within twenty-four hours. It was especially designed for persons "on the go".

Digital Audio Recording and Playback

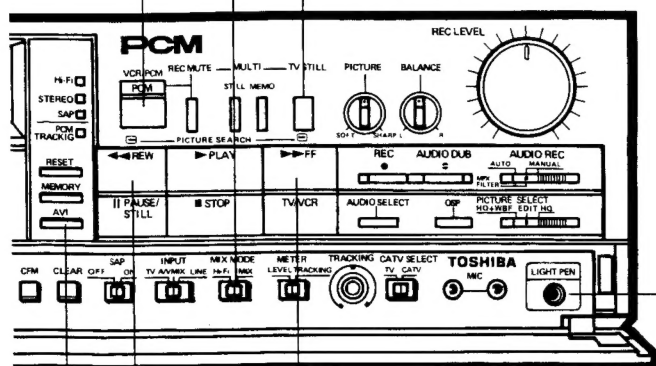
This VCR enables high quality digital audio recording and playback by using a built-in PCM (pulse code modulation) processor. The PCM changes audio analog signals into pulsed digital signals and then reconverts to analog signals, to get a sound close to the original in recording and playback. Since the PCM recording terminal is equipped independently, recording can be done independently of Hi-Fi recording.

Hi-Fi Recording and Playback

This function creates a sound quality similar to that of digitally-recorded sound. It gives a wide dynamic range and creates less noise and distortion because sound is recorded in FM.

Digital TV Still

This function enables still frame during a broadcast TV program. The sound continues even during the still frame, so that it is possible to know what is happening in the program.



Digital Graphic Timer

The optical fiber and digital technologies enable information necessary to timer reservation to be displayed on the TV screen in easy-to-see color graphics. A light pen which uses an optical fiber enables easy timer reservation by simply touching it to the CRT following the display on the screen. The reservation can also be checked by using the graphic display on the TV screen.

Two-Way Picture Search

This function lets you speed up playback both forwards and in reverse at 5 times or 15 times (EP speed only) the normal playback speed in order to quickly locate a certain section on the tape you are watching.

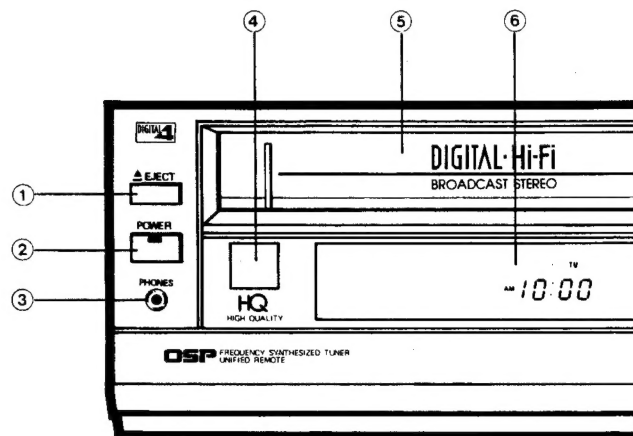
AVI (Automatic Visual Index) Function

This convenient function enables quick location of the desired scene or number. It automatically inserts the AVI signal on the tape at the beginning of each sequence in recording; when the AVI button is pressed in the fast-forward or rewind mode in reproduction, the tape can be advanced to the beginning of each required and reproduce the searched sequence for about 5 seconds. If the desired picture is not found during the first the 5 seconds, the tape resumes the next fast-forward or rewind movement automatically. The tape repeats this until the PLAY button is pressed to reproduce the desired picture.

Location of Controls

(Front Panel)

- ① **EJECT Button**
Used to eject a tape from the cassette compartment.
- ② **POWER Button**
Used to turn the VCR on when it is plugged in. Note that the power goes on automatically (Auto Power On) when a tape is loaded into the cassette compartment.
- ③ **PHONES (Headphones) jack**
For connection of headphones for monitoring the sound during audio dubbing or for private listening.
- ④ **Infrared Remote Control Receiver**
Picks up infrared light commands from the remote control.
- ⑤ **Cassette Compartment**
Note that the power goes on automatically when a cassette is inserted in the compartment. If a pre-recorded cassette without the safety tab is inserted, the Fully-Automatic Play function is activated.
- ⑥ **Multi Display**
Displays all types of information to guide you in operating this VCR.
- ⑦ **AVI (Automatic Visual Index) Button**
Used to activate the AVI function. "S" appears in the multifunction display.
- ⑧ **MEMORY Button**
Used in the Rewind or Fast Forward mode to stop the tape automatically at about 0000 on the counter.
- ⑨ **RESET Button**
Used to reset the counter to 0000.
- ⑩ **SAP Indicator**
Lights when a SAP program is being received.
- ⑪ **STEREO Indicator**
Lights when a stereophonic program is being received.



- ⑲ **PICTURE Sharpness Control**
Used to adjust for softer or sharper pictures, as desired, during recording and playback.
- ⑳ **BALANCE Control**
Used to adjust the balance of the recording level between left and right during Hi-Fi recording in MANUAL or PCM recording.
- ㉑ **REC LEVEL Control**
Used to control adjust the recording level during Hi-Fi recording in MANUAL or PCM recording.
- ㉒ **AUDIO REC Select Switch**
By setting this switch to AUTO, the Hi-Fi recording level will be automatically set to the appropriate level. For manual adjustment set the switch to MANUAL.
- ㉓ **PICTURE SELECT Switch (HQ + WBF/EDIT/HQ)**
HQ + WBF: When recording in this position, enabling a distinct picture for recording and playback. We recommend this position for recording.
EDIT: Set in this position when copying.
HQ: For recording in areas where the broadcast is weak, this position may improve picture quality. Also, when snow occurs during playback set to this position.
- ㉔ **OSP Button**
Used to operate the Digital Graphic Timer.
- ㉕ **AUDIO DUB Button**
Used to dub audio only into a pre-recorded tape.
- ㉖ **AUDIO SELECT Button**
Used to select one of the audio output modes.
- ㉗ **REC Button**
Used to begin recording a program.
- ㉘ **TV/VCR Button**
Used to select the VCR tuner or the TV tuner for reception. The setting you have chosen will appear in the form of the letters VCR either lighting up or going off on the multidisplay.
When set to TV (not lit) you can watch normal TV programs or watch one TV program on the TV while recording another program with the VCR.
When set to VCR (VCR lamp is lit), you can watch the program being recorded.

⑫ **Hi-Fi Indicator**
Lights while recording or playing back a recorded tape on a Hi-Fi system.

⑬ **PCM TRACKING Indicator**
Indicates whether the signal has dropped out when playing back PCM-recorded tape, by lighting, blinking or not being lit.

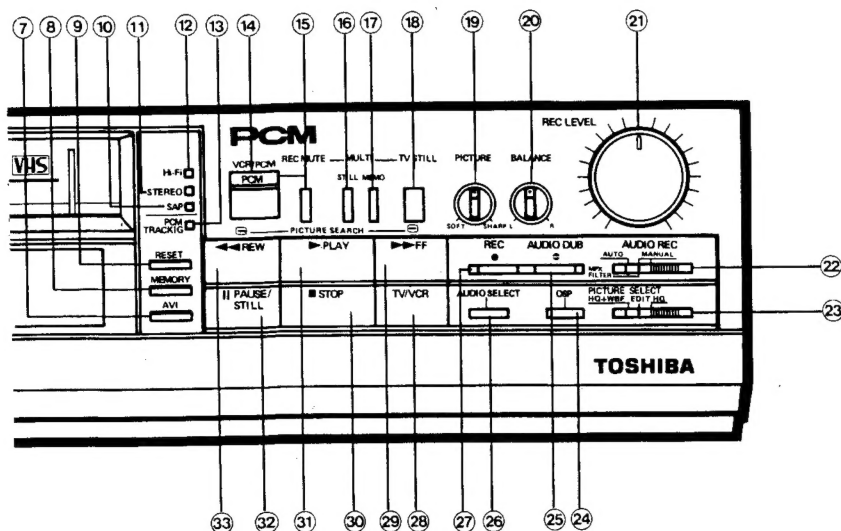
⑭ **VCR/PCM Selector**
Select either the PCM mode for PCM (Pulse Code Modulation) recording and playback or the VCR mode for normal recording and playback. The PCM indicator lights when set to the PCM mode, and goes off when set to the VCR mode.

⑮ **REC MUTE Button**
Used during PCM recording to create a silent segment on the tape when, for example, you wish to cut out unnecessary commercials or narrations.

⑯ **MULTI STILL Button**
Used to operate the Multi Still function, one of the special Multi Digital Play features.

⑰ **MULTI MEMO Button**
Used to operate the Multi Memo function, one of the special Multi Digital Play features.

⑱ **TV STILL Button**
Used to still the picture when viewing a TV program.



⑲ **FF Button**
Used to advance the tape at high speed when the VCR is in the STOP mode. While fast-forwarding there will be no picture or sound from the pre-recorded tape. This button is also pressed during playing mode to access Forward Picturer Search.

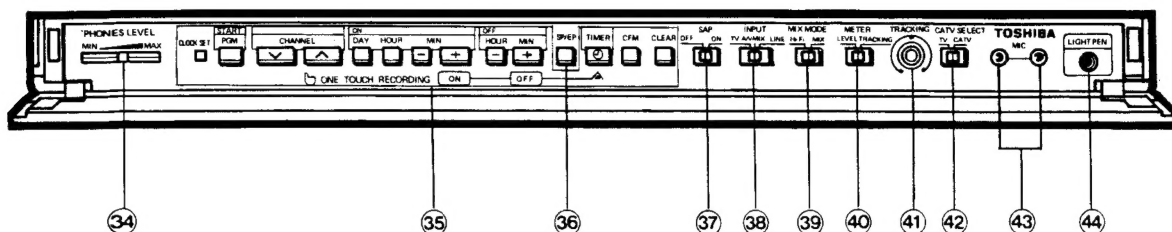
⑳ **STOP Button**
Used to stop a tape during recording and playback. If the button is pressed during Fully-Automatic Play, the function will be cancelled.

㉑ **PLAY Button**
Used to begin playing back a tape.

㉒ **PAUSE/STILL Button**
Used during recording to edit out unwanted material. It is also used during playback to partially freeze a certain frame and for Frame Feeding.

㉓ **REW Button**
Used to rewind the tape at high speed when the VCR is in the STOP mode. During rewinding there will be no picture or sound from the pre-recorded tape. This button is also pressed during play mode to access Reverse Picturer Search.

Behind The Door



34 PHONE (Headphones) LEVEL Controls

Used to adjust the volume heard through the headphones.

35 Multifunctional Buttons

These buttons are used for a number of different operations. Detailed explanations of their uses are given on the following page.

36 SP/EP Tape Speed Selector

This button is used to select a tape speed to record at (SP: Standard Play or EP: Extended Play) depending on your preferences at the moment. The EP mode gives you more footage on your tape, while the SP mode gives you best quality recordings.

37 SAP Switch

SAP (Second Audio Program) permits reception of Multi-plex broadcast. When SAP signal is received, the SAP indicator lights up. If SAP is desired, set the SAP switch to "ON".

38 INPUT Selector Switch (TV.A/V MIX.LINE)

In this VCR, signals being recorded are selected using the INPUT Selector Switch. (Described below)

39 MIX MODE Selector Switch

Set this switch to "Hi-Fi" to listen to Hi-Fi sound only, and to "MIX" to mix Hi-Fi and monophonic sound.

40 METER Selector Switch

The METER Selector Switch is used to monitor/adjust the audio level when set to LEVEL or Hi-Fi Tracking Control when set to TRACK.

41 TRACKING Control

This control is adjusted when you want to eliminate noise from your picture or Hi-Fi audio during playback.

42 TV/CATV Selector Switch

If a cable system is used, leave it in CATV position.




43 MICROPHONE Jacks

Used to connect the microphone for live recording and after-recording.

44 LIGHT PEN Jack

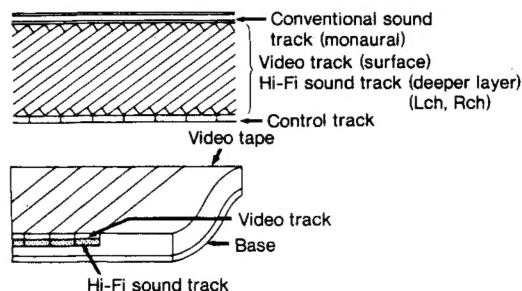
Used to connect the lightpen when using the Digital Graphic Timer function.

Signals that can be recorded

Position	Video Track	Sound Track		
		Conventional sound Track	AUDIO Hi-Fi Track	
			L	R
	Records video signals from VCR Tuner	Records sound from VCR Tuner (MONO)	SAP ON	TV L
			SAP OFF	TV R
	Records video signals from VCR Tuner	Records sound from VCR Tuner (MONO)	Records sound from audio input terminal	—
			L	R
	Records video signals from video input terminal	Records sound from audio input terminal	Records sound from audio input terminal	—
			L	R

This is a VHS Hi-Fi VCR with special Hi-Fi sound heads, which record sound signals a layer below the video tracks.

The Hi-Fi sound track is set in stereo format as shown in the diagram below.



Specification of Hi-Fi Recording

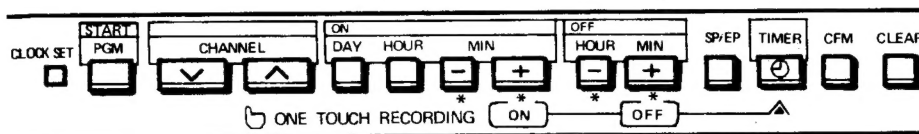
Dynamic Range : More than 90 dB

Wow & Flutter : Less than 0.005%

Frequency Response : From 20 Hz to 20 kHz

Multifunctional Buttons

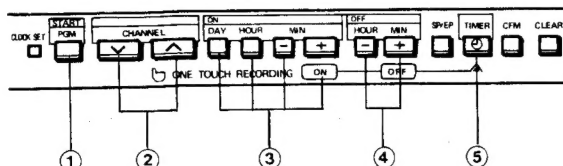
As mentioned in the previous section, one of the special features of the new and simplified DX-900 is that some of its controls are multifunctional. This means that one button has two or more functions, depending on the operation being performed. This is especially so for the controls on the right half of the control panel. Although this may seem somewhat complicated at first, once you become familiar with the various operations it will be apparent that this is a truly economical and easy-to-use system.



* The asterisk * means that this is a multifunctional button.

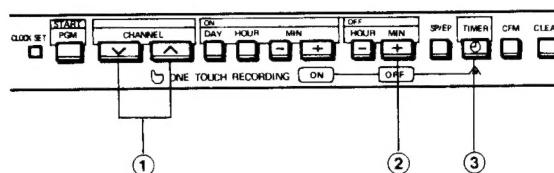
These multi-function buttons are used in the following operations. See the specific sections for more detailed explanations of each button's uses.

PROGRAMMABLE TIMER FUNCTION



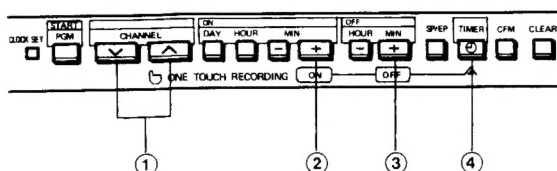
- 1 PGM/START Button
- 2 CHANNEL Select Buttons
- 3 DAY/HOUR/MIN -/+ Buttons (timer start)
- 4 HOUR/MIN Buttons (timer end)
- 5 TIMER Button

OTR FUNCTION I



- (Immediate recording)
- 1 CHANNEL Select Buttons
 - 2 OTR OFF Button
 - 3 TIMER Button

OTR FUNCTION II

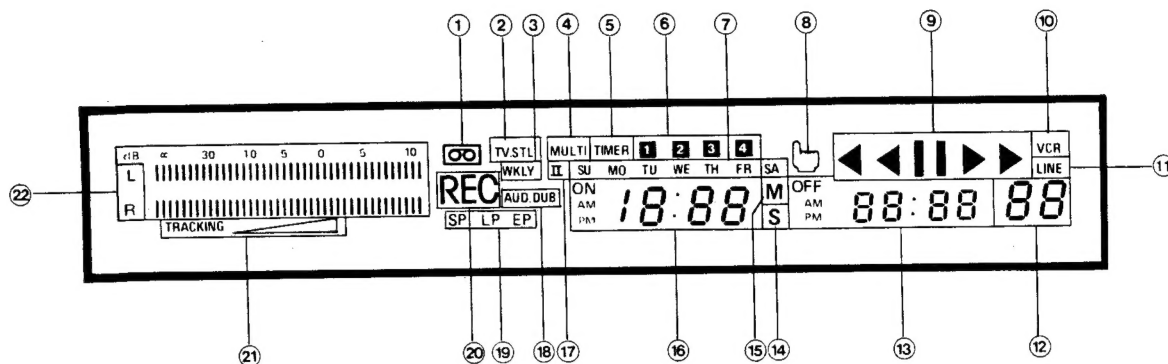


- (within 24 hours)
- 1 CHANNEL Select Buttons
 - 2 OTR ON Button
 - 3 OTR OFF Button
 - 4 TIMER Button

Multidisplay

MULTIDISPLAY

This easy-to-read multiple function display gives various information concerning VCR functions. Only a general description of each function is given here for reference.



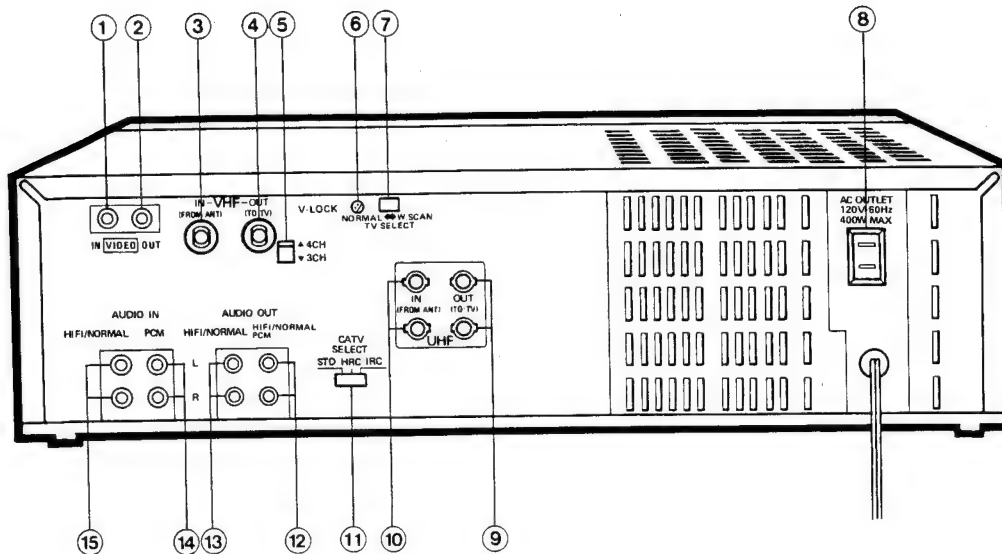
- ① **Cassette Indicator**
Lights when a cassette is loaded, even when the power is off. The indicator flashes when a tape is being inserted or ejected.
- ② **TV Still Indicator**
Lights up when you are using the TV STILL function.
- ③ **Weekly Indicator "WKLY"**
Lights when the Programmable Timer is being set to record programs in succession by week.
- ④ **MULTI Indicator**
Lights when the Multi Digital Play function is in use.
- ⑤ **Timer Indicator**
Lights when the TIMER button has been pressed to set the Programmable Timer recording cycle or to set recording in the One-Touch Timer-mode.
- ⑥ **Program and Multi Frame Number Indicator**
Displays the program number when the Programmable Timer is set, and the still and memory frame number when in the Multi Still mode.
- ⑦ **Day Display**
Indicates the day of the week set by the VCR clock for the present time or for timer programming.
- ⑧ **OTR Indicator**
Lights up when programming the One-Touch Timer.
- ⑨ **Multifunctional Mode Indicator**
- ⑩ **VCR Indicator**
Lights when the TV/VCR button on the control panel is pressed. This indicator lights when viewing a program while it is being recorded, or watching TV through the VCR tuner. It is off when watching a normal TV program (not recording) or when watching one program while recording another.
- ⑪ **LINE Indicator**
Lights when the INPUT Selector switch is in the LINE position.
- ⑫ **CHANNEL Indicator**
Indicates the number of the channel which is currently being watched or recorded.
- ⑬ **Multifunctional**
Tape counter display programmable Timer OFF time/OTR END time.
- ⑭ **Visual Index Indicator**
Lights when in the Automatic Visual Index Search mode.
- ⑮ **Counter Memory Indicator**
Lights when the COUNTER MEMORY button is pressed to program the tape counter.
- ⑯ **Multifunctional**
Clock/Programmable Timer Start time/OTR Start time display.
- ⑰ **Second Week Indicator "II"**
Lights when setting the Programmable Timer to record a program in the second week.
- ⑱ **Audio Dub Indicator**
Lights when the Audio Dub function is being controlled for dubbing.
- ⑲ **Tape Speed Indicator**
Tape speed is indicated (SP/LP/EP).
- ⑳ **Mode Indicator**
The [REC] indicator lights when this VCR is in REC mode (for recording).
- ㉑ **TRACKING Indicator**
Lights when the METER Selector switch is set to TRACKING.
- ㉒ **Audio Select Indicator**
Changes according to the selected audio output mode. The L and R indicators are for the Stereo mode.

▶ Playback/ Recording	⏸ Still/Pause	▶▶ FF/Forward Picture Search
◀◀ REW/Reverse Picture Search	◀ Reverse slow motion	⏪ Slow motion

NOTES

Multifunctional indicators serve a number of purposes. Different symbols appear in the same place according to the buttons you press. This will become clearer as you actually begin using the DX-900.

Rear Panel



① Video IN Jack

Connect this jack to the VIDEO output jack for recording from an external video source such as VCR, VCR or TV set equipped with this jack.

② Video OUT Jack

Connect this jack to the VIDEO input on a VCR, VCR or TV set with the jack for external recording or monitoring.

③ VHF IN Terminal

This terminal is connected from a VHF antenna for VHF reception or a cable TV line.

④ VHF OUT Terminal

This terminal is connected to your TV set's VHF IN terminal.

⑤ Output Channel Selector Switch

This switch is set to either 3CH or 4CH according to the channel left vacant in your area, so that signals received by the VCR can be converted into signals suitable to your TV for viewing through an unused channel (either 3 or 4).

⑥ V-LOCK Adjustment

If the picture is vertically unstable during STILL mode, adjust with this control.

⑦ TV SELECT Switch

Switches between normal TV and Double Scan TV. Set to the Double Scan position, if your TV is a Double Scan TV.

⑧ AC Outlet

AC power (120 VAC, 60 Hz, 400 W max.) is supplied through this outlet. Power is supplied when the power cord is plugged in even if the power switch is off.

⑨ UHF OUT Terminals

These terminals are connected to your TV set's UHF IN terminals.

⑩ UHF IN Terminals

These terminals are connected to a UHF antenna for UHF reception.

⑪ CATV MODE SELECTOR Switch (STD/HRC/IRC)

Set to the desired position depending on your cable system.

⑫ Audio (Hi-Fi/Normal/PCM) OUT Jack

Audio of a Hi-Fi audio track and normal audio track is transmitted from this jack. Audio of a PCM recording can be transmitted from this jack by setting the VCR/PCM Selector on the front panel to PCM.

⑬ Audio (Hi-Fi/Normal) OUT Jack

Connect this jack to the AUDIO input on an external audio source for playing or recording.

⑭ Audio (PCM) IN Jack

To make a PCM recording, hook up an external audio source such as audio equipment to this jack. Audio received through this jack is recorded in PCM mode.

⑮ Audio (Hi-Fi/Normal) IN Jack

Connect this jack to the AUDIO output jack for recording from an external audio source such as another VCR, VCR, receiver or TV set equipped with this jack.

Remote Control

This section shows the locations of the buttons and their functions.

This DX-900 remote control can operate both the VCR and the TV. The upper buttons are used for the TV, and the lower buttons for the VCR. It also operates special functions such as Multi Digital Playback which are not handled on the VCR main unit.

TV Operating part

① CHANNEL Select Buttons

Used to select TV channels.

② Volume Adjustment Buttons

Used to adjust the TV volume.

③ TV POWER Button

Used to turn the TV power on or off.

④ TV/VIDEO Button

Used to select the VCR or TV.

Notes 1. Not applicable to Toshiba TVs whose remote controllers are CT-907, 910, 913, 917, 918, 924, 932, 934, 944, 950, 951, and 951A.

2. The TV/VIDEO button cannot be used for TVs not having a TV/VIDEO switching function.

VCR Operating Part

⑤ TV/VCR Button

Used to select the VCR tuner or TV tuner for TV viewing and various recording options.

⑥ TV STILL Button

Used to still the picture when viewing a TV program.

⑦ CHANNEL Select Buttons

Used to select a channel directly. Press two keys such as 02, 03, ... or 09 when a channel from 2 to 9 is selected. The UP (▲) button is used for selection in the upper direction, and the DOWN (▼) button is for the lower direction.

Note:

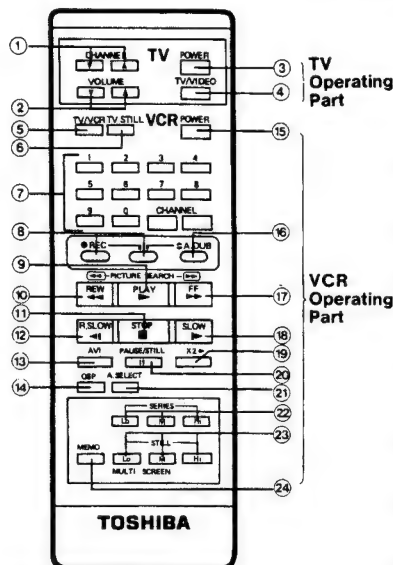
When a channel is selected by one key such as 2, 3, ..., or 9, check that the channel indicator of the VCR display goes from [2] to [2] after two seconds.

⑧ REC Buttons

Press these buttons simultaneously to start recording on the tape loaded.

⑨ PLAY Button

Used to activate the Playback mode as well as special effects in playback operation.



⑩ REW Button

Used to rewind the tape at high speed and reverse the picture for searching a section.

⑪ STOP Button

Used to stop the VCR in any mode. Note that pressing this button will cancel the Fully-Automatic Play function.

⑫ REVERSE SLOW MOTION Button

Used during playback for reverse slow motion at 1/4 the normal speed.

⑬ AVI Button

Used to operate the Automatic Visual Index function. The tape stops in the beginning of the program automatically during fast forward or

ward or rewind if this button has been pressed; then the program is played for approx. 5 seconds, and then fast forward or rewind is recovered to search for the beginning of the next program. The AVI signal is recorded by pressing the AVI button during recording.

⑭ OSP Button

Used to select the Timer Screen mode, when the timer reservation is validated.

⑮ POWER Button

Used to turn the VCR power on or off.

⑯ Audio Dubbing Buttons

Used when after-recording to add sound to the tape when recording is finished. Press these buttons simultaneously to start dubbing on the recorded tape.

⑰ FF Button

Used to forward the tape at high speed and forward the picture for searching a section.

⑱ SLOW Motion Button

Used during playback for forward slow motion at 1/4 the normal speed.

⑲ Digital Double-Speed Playback Button

Used to play back the picture at twice the normal speed.

⑳ PAUSE/STILL Button

Used during recording as well as for various special effects in playback operation.

㉑ AUDIO SELECT Button

Used to select the sound.

㉒ MULTI SERIES SPEED SELECT Buttons

Used to change the Multi Series operation speed.

㉓ MULTI STILL SPEED SELECT Buttons

Used to change the Multi Still operation speed.

㉔ MULTI MEMO Button

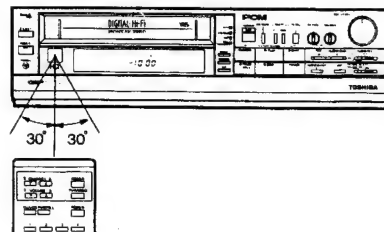
Used to operate the Multi Memo function.

NOTES

- The remote control **cannot be used** to set the **Programmable Timer**, or during timer operation.
- Press remote control buttons at **intervals of at least 1 second** each for correct operation.
- Keep the unit **away from heat and humidity** and sources of **electrical shock**, and take the batteries out when not using it for a long period of time to safeguard against corrosion.

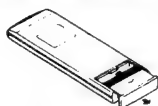
Remote Control Operation Range

1. Any object between the remote control and VCR will block the path of the beam when it is being used. Dark walls, direct sunshine or very bright (incandescent) light will reduce the remote control sensitivity.
2. Hold the remote control within an angle range of about 30° from either side of the VCR receptor center as shown.
3. When the remote control is vertical to the VCR receptor, it will work within about 23 feet (7 m) from the VCR.
4. Point the front of the remote control directly at the front of the VCR.

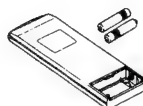


Battery Installation

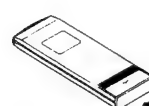
How to install batteries into the Remote Control Unit:



Remove the battery cover on the reverse side of the unit.



Install 2 batteries ("AAA" size) into the unit.



Close the battery cover.

Note: Carefully install batteries to match the polarity diagrams.

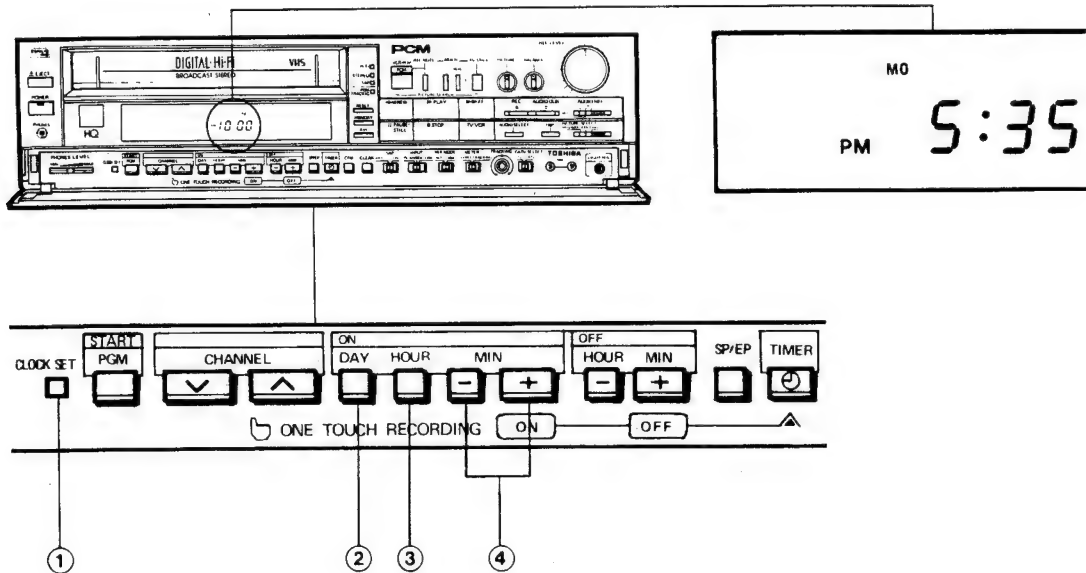
Setting the VCR Clock

The VCR clock can be set when basic installation connections have been made (to TV and antenna) and the VCR has been plugged in. The clock not only serves as a digital display of your current local time, but is essential to the successful operation of the VCR's Programmable Timer used for unattended recording. Therefore it is of utmost importance that the clock be set accurately. The clock display will flash "SU. MO ... SA AM 12:00" when the VCR is plugged in. The clock will work as long as the cord is plugged in, regardless of whether the VCR power is on or off. The clock display brightness will automatically darken from 10 PM to 5.59 AM.

The following example shows you how to set the clock.

Example: Setting the clock to the imaginary present day and time. Monday 5:35 pm.

The light pen can also be used to set the time on the TV screen.



1	2	3	4	5
Press the CLOCK SET button ①.	Set the day of the week, by pressing the DAY button ②.	Set the hour, by pressing the HOUR button ③.	Set the minutes by pressing the MIN buttons ④ to add and subtract minutes.	Press the CLOCK SET button ①.
CLOCK SET <input type="checkbox"/>	MO	MO PM 5	MO PM 5:35	CLOCK SET <input type="checkbox"/> The clock will start operating at 5.35 pm.

NOTES

Power Failure

- When the VCR's back-up time is exceeded during a power failure the entire clock display will flash on and off. When this happens reset the clock to the correct present time according to the above steps.
- When the colon in the clock display is flashing, this means that there has been a power failure within the time allowed by the back-up reserve. Reset the clock to the correct present time.

Operating the FS Tuner

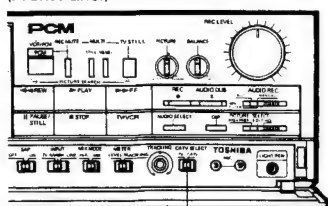
This VCR has the FS (Frequency Synthesized) tuner and is designed to receive the following TV signals:

1. Broadcast TV signals.
 2. STD (standard) Cable TV signals.
 3. HRC (Harmonic Related Carriers) Cable TV signals.
 4. IRC (Incremental Related Carriers) Cable TV signals.
- IRC is also called ICC (Incremental Coherent Carriers).

For each of these systems, exact frequencies are developed within your VCR set assuring precise tuning. For proper tuning operation, the CATV Mode Selector switch mentioned below must be set correctly to match your cable TV system. When you connect to a cable TV system, it is recommended that you consult with your local cable company to check if your system is STD, HRC or IRC.

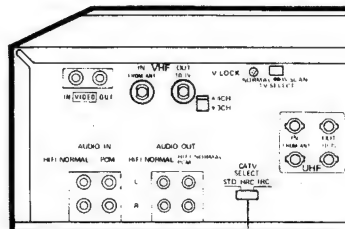
Controls Used for Operating the FS Tuner

(Front Panel)

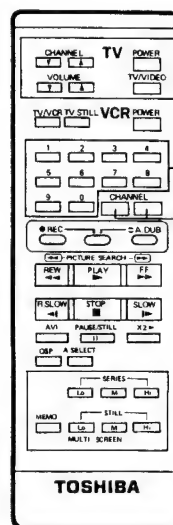


TV/CATV Selector Switch

(Rear Panel)



CATV MODE Selector Switch



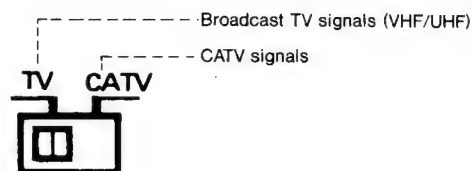
Channel Select Buttons (Direct)

Channel UP/DOWN Buttons.

Note 1: Select a channel by two keys of channel select buttons, such as 02, 03, ..., or 09 when a channel from 2 to 9 is to be selected.

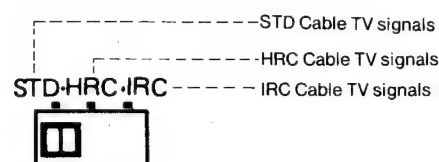
Note 2: When a channel is selected by one key of channel select buttons, such as 2, 3, ..., or 9, check that the channel indicator of the VCR display goes from 2 to 2 after two seconds.

TV/CATV SELECTOR SWITCH



Note: Do not alter the switch setting while recording. If the switch setting is altered, the program picture will change.

CATV MODE SELECTOR SWITCH:



HOW TO FIND OUT YOUR CABLE SYSTEM

1. Change the TV/CATV Selector Switch to the CATV position and the CATV Selector Switch to the STD position.
2. Select various channel and conform whether the channel will lock immediately with perfect picture. If the channel seem to take a few seconds to lock in, your cable system may be an other system. In this case, continue with the following steps.
3. Change the CATV Selector Switch to the HRC position, and try the above procedure again.
4. If you are having a problem with only Channel 5 and 6, you may have an IRC system, so change the CATV Selector Switch to the IRC position.

Note: A table denoting the relation of channels of each TV signal system to the indications of this VCR set is set out on the next page. Some cable companies also offer premium pay channels in which the signal is scrambled. Descrambling these signals for normal viewing requires the use of a descrambler device which is provided by the cable company. Check with your local cable company for more complete information on the available channels.

CHANNEL REFERENCE CHART

NUMBER ON THIS VCR		2	3	4	5	6	7	8	9	10	11	12	13
CORRESPONDING	TV OFF THE AIR	2	3	4	5	6	7	8	9	10	11	12	13
	CATV STD	2	3	4	5	6	7	8	9	10	11	12	13
CHANNEL NUMBER	CATV HRC/IRC	2	3	4	A-7	A-6	7	8	9	10	11	12	13
ACTUAL TV STATION													

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
R	S	T	U	V	W	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK
R	S	T	U	V	W	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK

48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66---	83	95	96	97	98	99	1
48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66---	83	SKIP					
LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	AAA	BBB	CCC	SKIP		A-5	A-4	A-3	A-2	A-1	SKIP
LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	AAA	BBB	CCC	SKIP		A-5	A-4	A-3	A-2	A-1	A-8

Note: CATV channel designation is not standardized as broadcast channels are. There may be some variation among cable systems. If in doubt, consult your local cable company.
If you select the skip channel directly, the channel will change to Ch 2.

TO SELECT CHANNELS

1. USING THE CHANNEL SELECT BUTTONS

(With the remote control unit)

- To select Channels 2 through 9, two methods are available. For one digit entry, press 4. Channel 4 will be selected within approx. two seconds.
For two digit entry, press 0 and 4. Channel 4 will be selected immediately.
- To select Channels 10 through 99, the two-digit entry must be used. Example: Press 3 and 5. Channel 35 will be selected immediately. If the second digit is not pressed within two seconds, Channel 3 will be selected.

Note: If a channel number other than that displayed is selected by using the direct key of the remote control, back to channel 2.

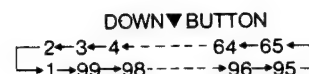
2. USING THE CHANNEL UP▲/DOWN▼BUTTONS

(With the unit or remote control unit)

Press and release the CHANNEL UP▲/DOWN▼ buttons. The channel steps up or down automatically and stops at the next active channel. It will not stop at inactive channels. If you want to select the next active channel, press the button again.

1) TV mode

2) STD, HRC or IRC mode



MULTI DIGITAL PLAY

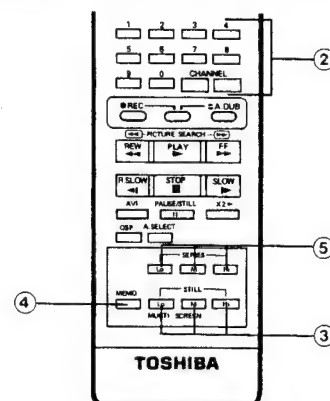
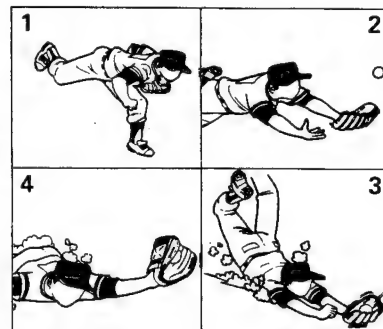
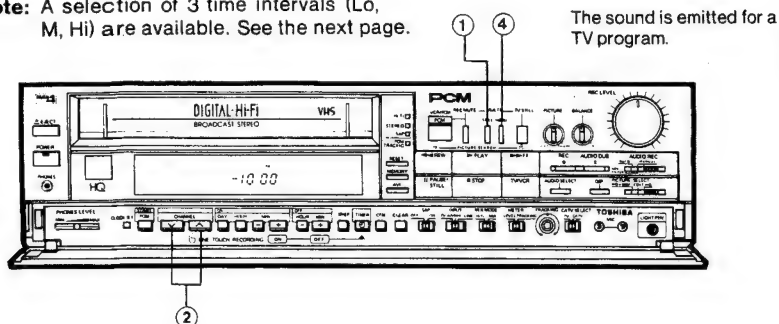
When playing back a tape or watching a TV program with the VCR tuner, various special effect playbacks dividing the picture into four sections can be enjoyed using the digital function.

Multi Still

This function places the four consecutive still pictures into the four divided sections on the monitor.

1. Press the MULTI STILL button ① while watching a TV program or playing back a tape.
2. Four continuous still pictures will appear on the TV screen. The still picture advances slightly in the order of 1→2→3→4.
3. Press again to cancel.

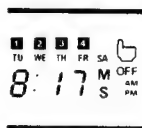
Note: A selection of 3 time intervals (Lo, M, Hi) are available. See the next page.



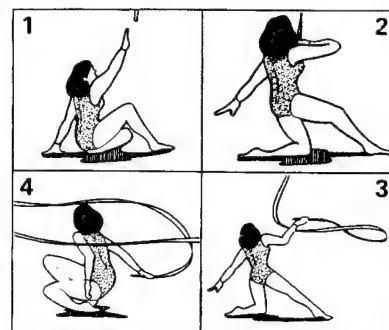
Multi Memo

The four still pictures stopped where you wanted them are placed in the four divided sections on the screen by this function.

1. While watching a TV program or playing back a tape, press the MULTI MEMO button ④ once for each desired picture. The timer display section's multidisplay number is displayed every time a picture is memorized.



2. Each time the MEMO button ④ is pressed, the picture is stored in memory, and when the MEMO button ④ is pressed for the fourth time, the four still pictures will appear simultaneously. Memorized still pictures will appear in the order of 1→2→3→4. The pictures will not be displayed unless the button is pressed four times.
3. Press for the fifth time to cancel.



Sound is emitted during TV programs.

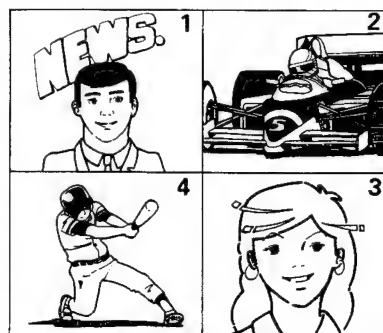
NOTES

If the button is pressed during playback, the feature is automatically cancelled approximately five minutes after the last picture was memorized, and the unit will return to playback. During a TV program, the feature is cancelled by pressing the channel selection button.

When watching a TV program, it is possible to memorize four separate programs by alternately controlling the channel selection button and MEMO button.

For example:

1. While receiving Channel 4, press the MEMO button (first time) and turn the channel to 6.
2. While receiving Channel 6, press the MEMO button (second time) and turn the channel to 8.
3. While receiving Channel 8, press the MEMO button (third time) and turn the channel to 10.
4. While receiving Channel 10, press the MEMO button (fourth time). Still pictures of four channels will be displayed.



Here, the sound of the last channel is emitted.

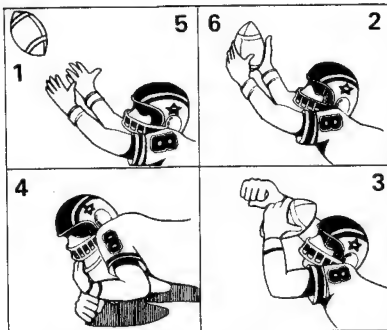
Multi Series

This function displays the consecutive still pictures into the four divided sections on the monitor. Multi Series can be controlled only with the remote control.

While watching a TV program, playing back a tape, or during slow playback or reverse slow playback, press the SERIES button ⑤ on the remote control to consecutively produce still pictures.

During TV Programs or Normal Playback.

Still pictures are displayed consecutively in the order of 1 → 2 → 3 → 4 → 5 → 6. After 4, picture ① is eliminated and replaced by the next still picture.

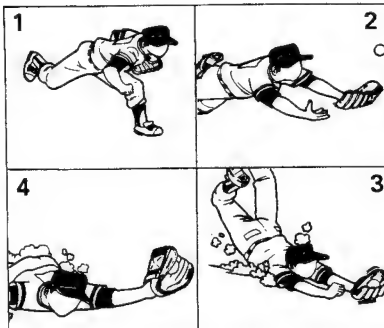


Sound is emitted during TV programs and normal playback.

Press again to cancel.

During Slow Playback.

Slow Multi Series pictures are displayed.



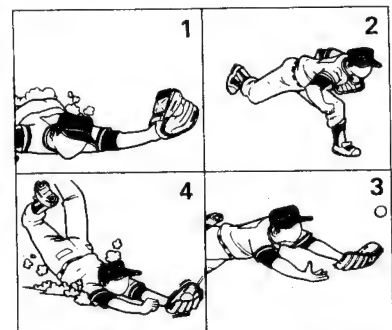
Sound is not emitted during slow playback.

Press again to cancel and return to slow playback.

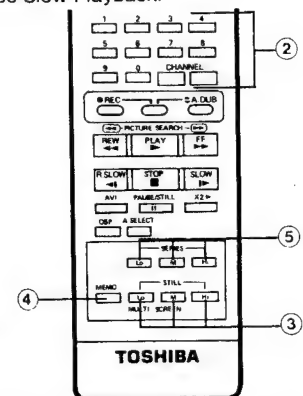
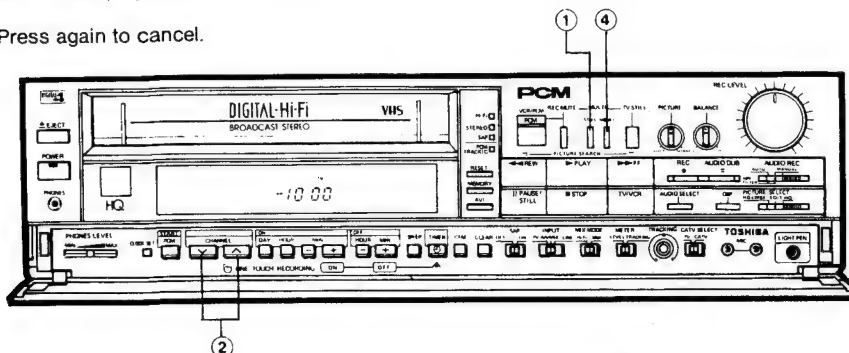
During Reverse Slow Playback

Multi Series pictures of reverse slow playback are displayed.

During Reverse Slow Playback, the pictures are displayed in the order of 1 → 4 → 3 → 2 → 1.



Press again to cancel and return to Reverse Slow Playback.



NOTES

If the button is pressed during playback, the feature is cancelled after approximately five minutes, and the VCR returns to the playback.

Multi Digital Display is not operated during a picture search.

During a TV program, the feature is cancelled by pressing the channel selection button ②.

Multi Series during slow playback is automatically cancelled after approximately five minutes to return to normal playback.

Multi Series during Reverse Slow Playback is automatically cancelled after approximately one minute to return to normal playback.

Distortions and picture flutters may occur in the upper part of the picture, but this is not due to malfunctions.

The display times of Multi Still and Multi Series may be changed with the remote control. To change the display time, cancel the operation in progress and press Multi Still change switch ③ and Multi Series change switch ⑤. Changing the switch during an operation will not change the display time.

Multi Still

Lo Still pictures 8 frames apart will be displayed.

M Still pictures 4 frames apart will be displayed.

The unit's button is fixed to the "M" speed.

Hi Still pictures 2 frames apart will be displayed.

Multi Series

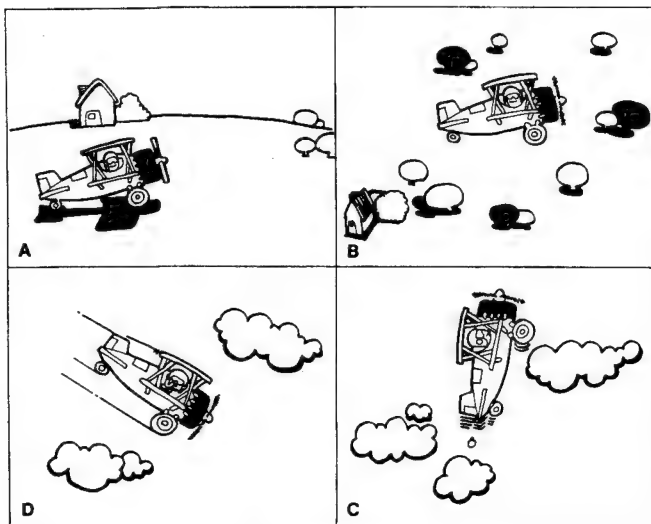
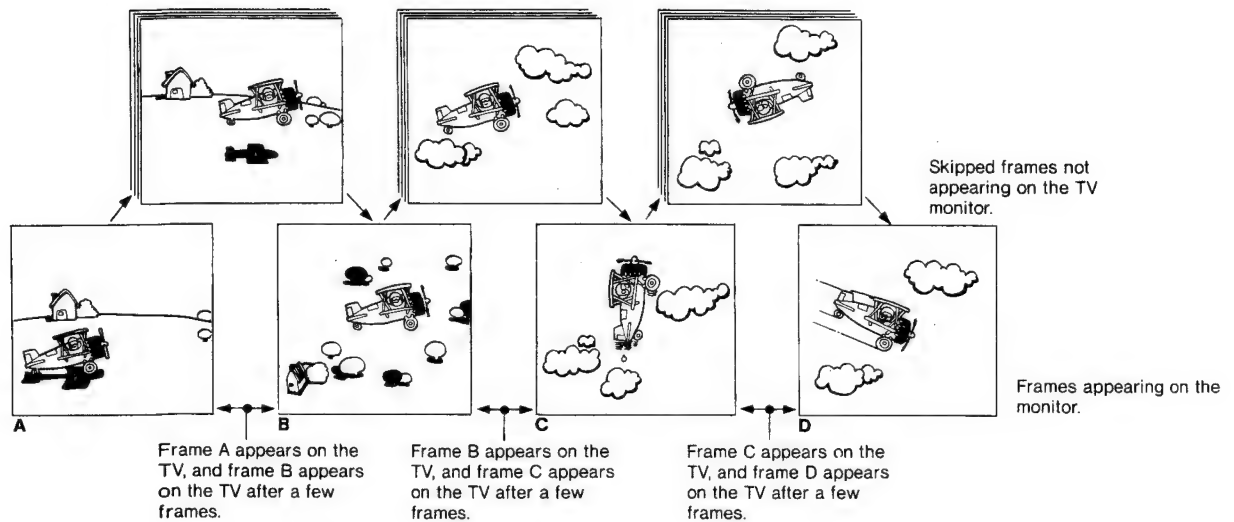
Lo A series of different pictures 32 frames apart will be displayed.

M A series of different pictures 16 frames apart will be displayed.

Hi A series of different pictures 8 frames apart will be displayed.

Brief Summary of Multi Digital Play

A still picture is shown on the TV, and after skipping a few frames, another still picture is shown. Then four still frames compose the TV picture.



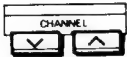


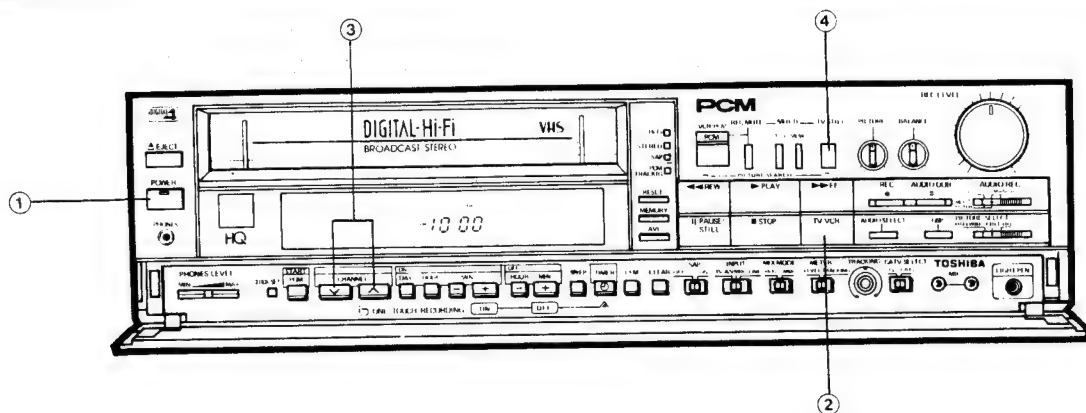
The TV monitor when the four frames are shown.



Hi, M and Lo speed modes are available for Multi Still and Multi Series modes. The speed mode governs the number of frames not appearing on the TV (the interval of time between one frame and another frame appearing on TV).

Digital TV Still

When using a TV to view pictures from the video tuner or line input, press the TV STILL button to stop the TV picture.

1 Press the POWER button ①. <div style="text-align: center; margin-top: 20px;">  </div>	2 Press the TV/VCR button ②. (VCR lamp lights.) Set the VCR Output channel of TV to 3 or 4. <div style="text-align: center; margin-top: 20px;">  </div>	3 Press the CHANNEL selector buttons ③ to select desired channel. <div style="text-align: center; margin-top: 20px;">  </div>
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4 Press the TV STILL button ④ to stop the picture. <div style="text-align: center; margin-top: 20px;">  </div> <p>Sound continues.</p>	5 Press the TV STILL button ④ again to release the picture. <div style="text-align: center; margin-top: 20px;">  </div>	<p>Note</p> <ul style="list-style-type: none"> • None of the operation buttons work during recording or playback. • The TV still frame is cancelled when any operation button is pressed. • The TV still frame cannot be recorded. • Correct recording may not be possible when attempting to record the TV still frame on another video. • Remote control is possible.
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MTS (Multi Channel TV Sound)

You can enjoy Multi-Channel TV Sound, even if you are viewing a monaural sound TV by using a Headphones, or Stereo AMP and speakers.

Signal Indicator

Using the indicators described below, you can check the type of signal being received.
STEREO • When a program in stereo is received, the STEREO indicator lights on.
SAP • When second Audio Program is received, the SAP indicator lights on.

Multi-Channel TV Sound Chart



SAP: (Second Audio Program)

Hi-Fi Audio Recording of Stereo and SAP Broadcasts

STEREO, SAP or STEREO & SAP broadcasts are recorded on the tape in Hi-Fi and NORMAL Sound simultaneously, when STEREO and SAP indicators lights on. Use the recording operations in "Basic Manual Recording" on page 27 for Hi-Fi recording with the addition of the SAP recording setting described below.

Condition of VCR			Signal of Broadcasts	Contents of recorded sound		
"MIC" jack	"INPUT" SW	"SAP" SW		Normal sound (Monaural)	Hi-Fi Sound Track	
Non Connect	TV	—	MONO	TV MONO	TV MONO	TV MONO
		—	STEREO	TV MONO	TV L	TV R
		OFF	MONO + SAP	TV MONO	TV MONO	TV MONO
		ON			TV MONO	TV SAP
		OFF	STEREO + SAP	TV MONO	TV L	TV R
		ON			TV MONO	TV SAP
	A/V MIX	—	—	TV MONO	LINE L	LINE R
	LINE	—	—	LINE L + R	LINE L	LINE R
Connect	—	—	—	MIC L + R	MIC L	MIC R

PLAYBACK (or Monitoring During Recording) of STEREO AND SAP Sound

Press AUDIO SELECT Switch to select the type of audio sound and broadcast combination you desire to monitor or playback.

Hi-Fi L + R → Hi-Fi L → Hi-Fi R → NORMAL

	Stereo Broadcast	SAP Broadcast
L	L/R	Main channel from L
R	L/R	SAP channel from R
L	L	Main channel
R	R	SAP channel
—	Monaural	Monaural



Simulcast Recording and Playback

While recording a TV program from some TV broadcast, such as MTV, HBO or MAX, if the TV program is also being simulcast in FM stereo, this VCR can also simulcast record the sound with your FM stereo tuner or receiver onto the Hi-Fi sound track.

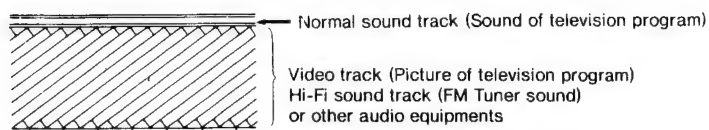
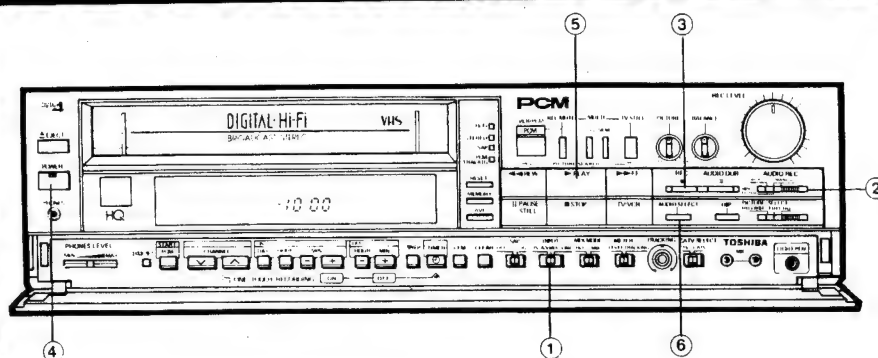
Simulcast Recording

<p>1</p> <p>Connect the AUDIO INPUT terminal (L/R) and the audio equipment output terminal. (See Fig. 2 on page 9)</p>	<p>2</p> <p>Recording is the same as for "Basic Manual Recording" (items 1-6 on the page 27.)</p>	<p>3</p> <p>Set the INPUT SELECT switch ① to A/V MIX.</p> <div style="text-align: center;"> </div>	<p>4</p> <p>Set the AUDIO REC Switch ② to AUTO.</p> <div style="text-align: center;"> </div>
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5

Press the REC button ③

Simulcast recording will begin.



Playback the TV program recorded in Simulcast (When connect the audio equipment)

<p>1</p> <p>Turn the TV on and set the VCR output channel. (Channel 3 or 4)</p> <div style="text-align: center;"> </div>	<p>2</p> <p>Push the VCR POWER ④ on. The Auto Power On function will be activated when a tape is loaded into the unit.</p> <div style="text-align: center;"> </div>	<p>3</p> <p>Insert the Simulcast-recorded tape.</p> <div style="text-align: center;"> </div> <p>Make sure that the cassette tab is intact. If a cassette without a safety tab is inserted Full-Automatic Play will begin.</p>	<p>4</p> <p>Press the PLAY button ⑤</p> <div style="text-align: center;"> </div>
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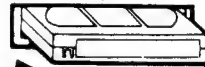
5

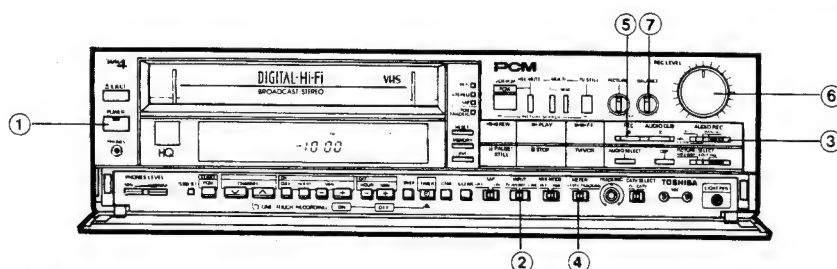
Press the AUDIO SELECT button ⑥ and to select the type of audio sound.

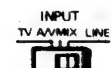






Indicator	Contents of Output Sound
L R	L/R
L	L ch
R	R ch
—	Monaural (TV sound)

Audio Hi-Fi Recording

This VCR can also be used as an Audio Tape Recorder for Hi-Fi long recording (max. 8 hrs. in EP mode ... When using T-160 cassettes).

<p>1</p> <p>Connect the AUDIO INPUT terminal (L/R) and the audio equipment output terminal.</p>	<p>2</p> <p>Push the VCR POWER ① on. The Auto Power On function will be activated when a tape is loaded into the unit.</p> <div style="text-align: center;">  </div>	<p>3</p> <p>Insert a video cassette.</p> <div style="text-align: center;">  </div> <p>Make sure that the cassette tab is intact. If a cassette without a safety tab is inserted Full-Automatic Play will begin.</p>
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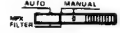


<p>4</p> <p>Set the INPUT select switch ② to LINE.</p> <div style="text-align: center;">  </div> <p>The timer display section's channel display is turned off and the LINE display is turned on.</p>	<p>5</p> <p>Set the AUDIO REC switch ③ to MANUAL.</p> <div style="text-align: center;">  </div>	<p>6</p> <p>Set the METER switch ④ to LEVEL.</p> <div style="text-align: center;">  </div>
<p>7</p> <p>Press the REC button ⑤.</p> <div style="text-align: center;">  </div>	<p>8</p> <p>Refer to the level meter and adjust with the REC LEVEL control ⑥ and BALANCE control ⑦.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <p>Level adjustment Adjustment differs depending on the sound source. Recording conversations: The red + 5 lamp is constantly lit. Use the above as a guideline and try various settings.</p>	

REC LEVEL Switch



- Simultaneous setting of both AUTO/MANU and MPX FILTER switches (Multiplex).
- Capable of the following three combinations.

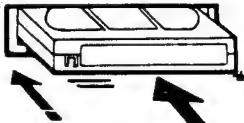


AUTO/MANU	MPX FILTER	SOURCE (recommended)
AUTO 	(ON)	FM Tuner
MANU 	(ON)	TV Tuner
MANU 	(OFF)	CD player AUDIO player

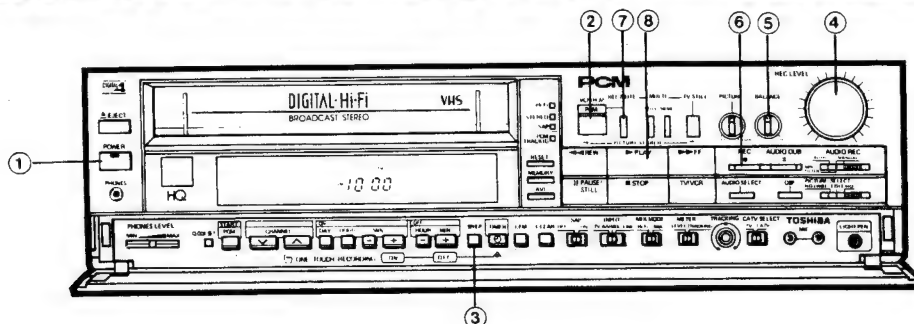
- AUTO/MPX FILTER (ON) position is recommended.

PCM Recording and Playback

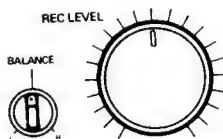
This VCR houses a PCM digital processor for enjoying PCM recording and playback of superior sound quality using the tape's video tracks.

PCM Recording

<p>1</p> <p>Connect the AUDIO INPUT terminal (L/R) and the audio equipment output terminal.</p>	<p>2</p> <p>Push the VCR POWER ① on. The Auto Power On function will be activated when a tape is loaded into the unit.</p>	<p>3</p> <p>Insert a video cassette.</p>  <p>Make sure that the cassette tab is intact. If a cassette without a safety tab is inserted Full-Automatic Play will begin.</p>	<p>4</p> <p>Press the VCR/PCM Switch button ②. At this time, set the Tape Speed Selector ③ to SP or EP.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>VCR/PCM</p> <p>PCM</p>  </div> <div style="text-align: center;"> <p>SP/EP</p>  </div> </div> <p>The PCM lamp lights.</p>
--	---	---	--



Adjust the recording level and recording balance with the REC LEVEL control ④ and BALANCE control ⑤. Adjust the recording so that when the loudest sound is recorded, the peak level meter does not exceed +5. If the level exceeds +5, distortion may occur during playback.



Press the REC button ⑥.



PCM recording will begin. The PCM pattern will appear on the TV screen.

When the REC button is pressed in the PCM mode, a PCM pattern shown in the photograph will appear on the TV screen.

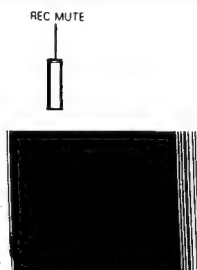


- The AUDIO REC change switch does not function during PCM recording. The recording level is adjusted using the REC LEVEL knob.
- The Hi-Fi recording level is automatically adjusted during PCM recording. The appropriate recording level differs depending on the sound source.
- By adjusting the level with the REC LEVEL knob so that +5 does not light when the loudest sound is recorded, a superior S/N ratio and distortion free recording will be obtained.
- During PCM recording, the VCR is always set to LINE and is not effected by the setting of the INPUT change switch.

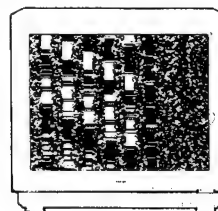
REC MUTE

Rec Mute is a function for cutting unnecessary portions during recording, and creating adequate sound-free sections between songs.

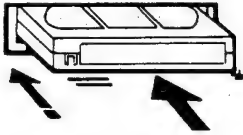


Press the REC MUTE button ⑦ when sections you wish to cut, such as commercials and narration, appear during recording. As long as the button is pressed nothing is recorded on the tape while it advances, creating a blank section. The TV screen looks like this picture while the REC MUTE button ⑦ is pressed.

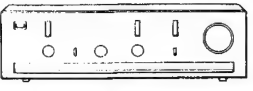
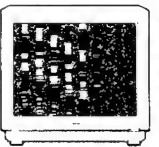


Recording is restarted when the button ⑦ is released. Hi-Fi sound and normal sound are recorded during REC MUTE.



PCM PLAYBACK

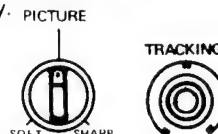
1	2	3	4
Connect the AUDIO OUTPUT (PCM/HiFi/NORMAL) terminal (L/R) and the audio equipment input terminal.	Insert a video cassette.  Make sure that the cassette tab is intact. If a cassette without a safety tab is inserted Full-Automatic Play will begin.	Press the VCR/PCM button ②  The "PCM" lamp lights.	Press the PLAY button ⑧ 

1	2
Adjust the amp volume. 	When a PCM recorded tape is played back, a PCM pattern like the one shown here will appear on the TV screen. 

PCM TRACKING ADJUSTMENTS

When tapes recorded in PCM on another VCR are played back, many dropouts may occur due to recording track aberration. For optional playback, make tracking adjustments by referring to the PCM TRACKING display.

1. Set the PICTURE knob to the center position.
2. Adjust the TRACKING knob so that the PCM TRACKING display lamp is constantly lit.
3. Twist the PICTURE knob to the position where the PCM TRACKING display lamp is constantly lit.



PCM TRACKING Display

This indicates whether the PCM digital data is logically correct as data. The video performance is evaluated only in terms of PCM digital data, so this display does not indicate picture quality.

- ☒ **Lit:** When there are few errors
- ☐ **Blinking:** When there are many errors and when the tracking is slightly off.
- ☐ **Off:** When there is an extreme number of errors and when the tape is not PCM-recorded.

NOTES

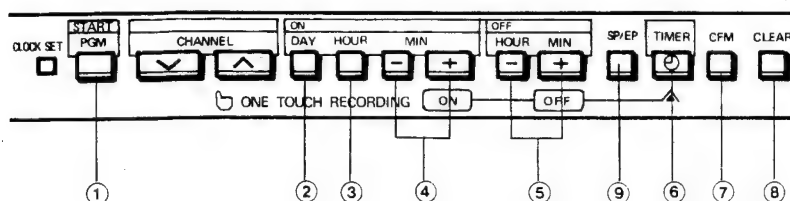
- PCM-recorded tapes have a wide dynamic range, and compared to analog video tapes the highs are accurately recorded and the noise level is low. For this reason, if the amp volume is carelessly increased because of low volume during playback of blank sections and low signal level sections, the speakers may exceed the input capacity at peak levels, causing them to be damaged. Please be careful of the amp volume adjustments. In particular do not make volume adjustments as you are listening to the noise of blank sections.
- When playing back a tape whose tabs are broken, reduce the amp volume before inserting the tape into the VCR.
- The level meter's L and R will not light up when playing back a tape recorded solely in PCM.

Programmable Timer Recording

The Programmable Timer is one of the DX-900's most valuable features. It lets you record up to four different programs over a period of two weeks when you are not at home or are busy. All you have to do is set the timer to the appropriate day, time and channel for the program you want recorded.

The One Touch Timer can also be used (i) when you want to begin recording immediately or; (ii) when you want to record a program automatically within 24 hours. See the section, One Touch Timer for details.

First, use this illustration to locate the buttons you will need to preset the timer.



Timer programming can be performed on the TV screen with the light pen (Timer screen function).

① PGM/START Button

Used to activate the Programmable Timer function and to set the program number in which you preset the times for an automatic, unattended recording program.

② DAY Button

Used to set the day on which you want to program a recording. When pressed once, the day advances by one day. When pressed down continuously, the days advance in rapid succession.

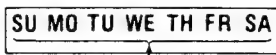


Specific day of the 2nd week.

Same day of every week.



Weekdays
(excluding Saturday
and Sunday)



Every day of the week

③ HOUR Button

Used to set the hour of the recording start time. When the button is pressed once, the time displayed advances by one hour. When pressed down continuously, the hours advance in rapid succession.

④ MIN -/+Buttons

Used to set the minutes of the recording start time. The "-" button subtracts minutes from the time displayed and the "+" button adds minutes. Similar to the DAY and HOUR buttons, these buttons can be used to add or subtract minutes one-by-one or in rapid succession.

⑤ HOUR/MIN Button

Used to set the hour and minutes of your recording end time. In the same manner as the time setting buttons above, these buttons can be used to add or subtract time units one-by-one or in rapid succession.

⑥ TIMER Button

Pressed when the preset times have been set for the recording start and end times. The timer will set the VCR stand by until the present time reaches the nearest preset time.

⑦ CFM (Confirm) Button

Used to check the contents of the preset recording program to see if everything has been set correctly.

⑧ CLEAR Button

Used to erase the programmed contents.

⑨ SP/EP Tape Speed Selector

Select a tape speed. (SP or EP)

This VCR enables you to set the timer reservation on the TV screen.

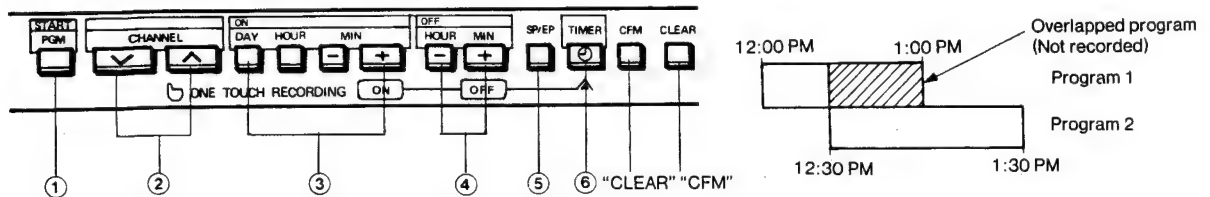
Setting the Programmable Timer

First check the present time on the clock. Then, insert a cassette (check to make sure that the cassette safety tab has not been removed).

The timer can be set to start recording on any day of the week (MON through SUN two weeks in advance from the present time), the same day of every week, weekdays (MON-FRI) or everyday. When setting the Programmable Timer, be careful not to overlap the preset times.

If you happen to overlap the preset programs, the start time has priority, and the overlapped programs cannot be recorded. Verify the programmed times by pressing the CFM button.

Follow the steps outlined below to preset programs into the timer's memory.



Example: To set Channel 6 on Saturday from 8:02 pm to 9:45 pm, as Program 2. (The present time is Tuesday, 8:21 am.) Tape speed is set to SP.

1. Press the PGM/START button ①.

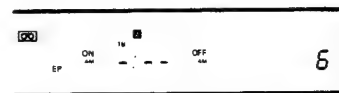


(The display shows that nothing has been set yet.)

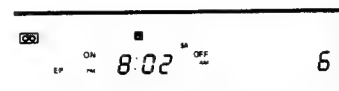
2. Press the PGM/START button ① and select one of the four available programs. In our example, we set program "2".



3. Set the channel by pressing the CHANNEL select button ②. In our example, we are setting channel "6".



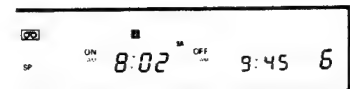
4. Set the recording start time by pressing the DAY, HOUR, MIN, + and MIN, - buttons ③. (ex: Saturday 8:02 PM). This procedure is the same as for setting the VCR clock.



5. Set the end time in the same way as step 4, using the HOUR/MIN buttons ④ this time. (ex: Saturday 9:45 PM).



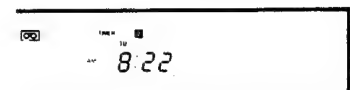
6. Set the tape speed by pressing the SP/EP button ⑤. In our example, we are setting tape speed "SP".



7. Press the PGM/START button ① to change the program number.

To repeat two or more programs, repeat steps 3 through 6. A maximum of four programs can be programmed into the time memory.

8. Press the TIMER button ⑥. TIMER is displayed on the multidisplay.



Note: A CATV program cannot be reserved together with a UHF program.

NOTES

- If the cassette has the safety tab removed, it will be ejected if the Timer button is depressed.
- After entering the Timer mode the programmed contents can only be changed by clearing the entire program.

Setting Programs for Specific Day of First Week/Specific Day of Second Week/Same Time Every Week/Every Weekday/Every Day

First, follow steps 1 through 5 of Setting the Programmable Timer.

1. When you want to record program on a specific day of the first week. Press the DAY button ③ once. The day indicator advances by one day.
4. When you want to consecutively record programs at the same time every weekday (MO-FR), press the DAY button ③ until only the weekday indicator is displayed (MO-FR).



2. When you want to record a program on a specific day of the second week. Press the DAY button ③ until the "II" indicator lights on the multidisplay.
5. When you want to consecutively record a program at the same time every day (SU-SA), press the DAY button ③ until all day of the week indicator is on the display light. When you press the DAY button ③, the indicators on the display will advance according to the cycle shown below.



3. When you want to record the same program at the same time on the same day each week. Press the DAY button ③ until the WKLY indicator lights on the multidisplay.



FOR BETTER UNDERSTANDING OF THE 14-DAY TIMER

This VCR has the 14-day timer. This function is very convenient, but unless you understand it correctly you might not be able to record the desired program.

Accordingly, please perform the 14-day timer operation when you have read through the following explanation carefully and comprehend what this timer is. The figure below shows that the present time is 10:00 AM, and how to coming 14 day are divided into the first week and the next week.

Keep this in mind as it will help you to understand what follows.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			present time 10:00 AM			
				(First week)		
				(Next week)		

→ SU→MO...SA→II SU→II MO...II SA→WKLY SU→WKLY MO...WKLY SA→MO, TU, WE, TH, FR
(specific day) (specific day of the 2nd week) (weekly) (Weekdays)

→ SU, MO, TU, WE, TH, FR, SA
(every day)

(The clock's date is displayed from the same day of the week)

NOTE

It is possible to set each program (1-4) to record consecutive days and/or weeks.

Error Indication

When the timer program has been entered improperly or the loaded cassette does not have a safety tab, the letter "E" will appear on the multidisplay. This indicates an error. The "E" symbol appears only for as long as the TIMER button is pressed down, then immediately disappears. A cassette without a safety tab will be ejected automatically.

E

(Displayed when the TIMER button is pressed.)

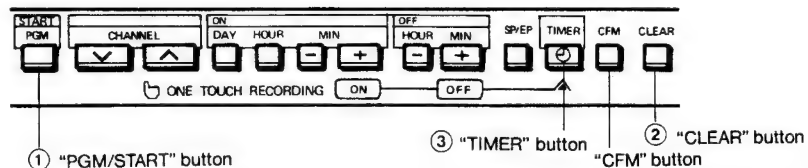
Confirming Programmed Contents

Press the CFM (confirmation) button and the programs entered on numbers 1 through 4 are automatically displayed in succession. The display then returns to the original clock mode. The program numbers flash during the time they are displayed. The contents of each program will be displayed for approximately five seconds, in the following orders:

Present time - Contents of No.1 - Contents of No.2 - Contents of No.3 - Contents of No.4

NOTE

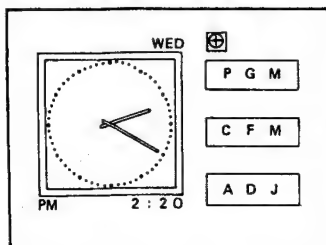
If the CFM button is pressed again, the contents of the next program is displayed less than five second.



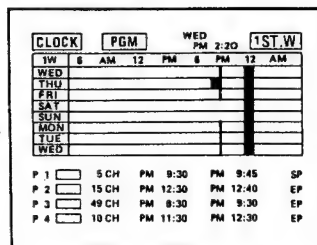
The Timer Screen function can be used to confirm on the TV screen the contents of timer programming done with the VCR main unit. Unit and remote control button.

1. Turn the TV on and set VCR output channel (Channel 3 or 4).
2. Push the VCR POWER ① on.
3. Press the OSP button ②.

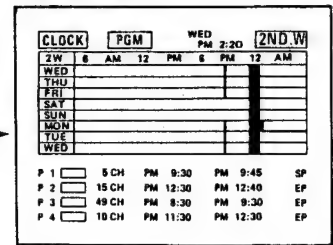
Press the OSP button ② once.



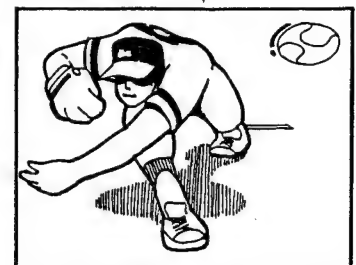
Press it twice.



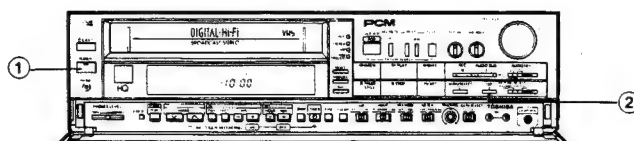
Three times.



Four times.





Returns to CLOCK & MENU screen when pressed five times.





Clearing Contents

If you noticed a mistake when confirming the preset programs, you can clear a particular setting by following the steps listed below.

1	2	Notes
<p>Press the PGM/START button ① to select the program you want to erase.</p> 	<p>Press the CLEAR button ② to erase the contents of the selected program.</p> 	<ul style="list-style-type: none"> • Except for programs set for everyday, everyweek or weekdays, preset programs are automatically erased once the recording has been completed. • When there has been a power failure that lasts longer than the VCR's back-up time the time display flashes "SU ... SA AM 12:00" to inform you that the back-up time has run out when the power comes back on.

Using the VCR During Timer Stand-by for Normal Playback and Recording.

You can use the VCR for normal playback and recording even when it is in the Timer Stand-by mode ("TIMER" lamp is lit on multidisplay). To do this, follow the procedure outlined below.

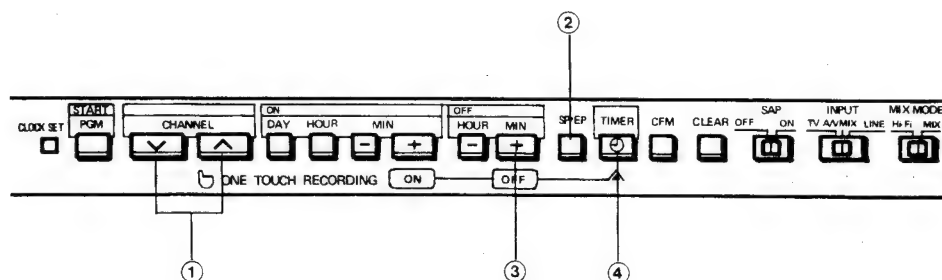
1	2	3	4
<p>Press the TIMER button ③ even when the VCR power is off.</p> 	<p>Turn the VCR on with the POWER button.</p> 	<p>Follow the normal procedures for recording and playback.</p>	<p>When you have finished using the VCR for normal purposes, press the TIMER button ③ again and the VCR will return to the Timer Stand-by-mode.</p>

One-Touch Timer Recording (I and II)

The DX-900's One-Touch Timer function lets you program the VCR to record a TV program either immediately or within 24 hours from the present time. One-Touch Timer recording can be done only with the power on.

One Touch Timer Recording I (Immediate Recording)

This procedure is used when you want to begin recording immediately.



① CHANNEL ∇/Δ Buttons

These buttons are used to set the TV channel to be recorded.

② Tape Speed Selector

Press this button to set the tape speed to SP or EP.

③ OTR OFF Button

The OTR OFF button is used to set the stopping time. When you press the button once, thirty minutes or less are added from the closest previous hour or half hour to your present time.

④ TIMER Button

This button is pressed when the recording time has been set, to begin the OTR recording cycle.

EXAMPLE: To record Channel 4 starting from now until 11:30 PM. (Example with present time) 10:05 pm, Thursday, tape speed SP.)

1. Make sure that the power is on and the TV channel is set to Channel 4.
2. Set the tape speed selector ② to SP.
3. Press the OTR OFF button ③ to set the recording OFF time. When this button is pressed the symbol will appear on your multidisplay.



When the button is pressed once: pm 10:30 (25 min.)
 When the button is pressed twice: pm 11:00 (30 min.)
 When the button is pressed 3 times: pm 11:30 (30 min.)

Total: 1 hour and 25 minutes

IMPORTANT: If the TIMER button is not pressed within nine seconds, the OTR time entered is cancelled and the display returns to the clock mode.

4. Press the TIMER button ④ and the recording begins. TIMER and are displayed. The clock displays the present time and the counter starts.



Counter

NOTE

If you have already made a program with the Programmable Timer for a certain time and want to record over that time later with the OTR function, all you need to do is follow the above procedure for One-Touch Timer Recording. The OTR function always has priority over the Programmable Timer.

NOTES

To confirm the programmed contents during One-Touch Timer recording, press the CFM button.

When setting the OFF time, note that THIRTY MINUTES ARE ADDED EVERY TIME THE OTR OFF button is pressed for a total of up to four hours. The indicator on the multidisplay returns to the counter display after the button has been pressed nine times (240 minutes) and OTR is cancelled.

Please note that the timer adds thirty minutes to the closest previous half hour, not the exact present time. For example, our present time is 10:05. When the OTR OFF button is pressed once, the timer indicates the time as 10:30. This means five minutes less from the half hour. If the present time is 10:29 and you press the OTR OFF button, the first timer recording will be 10:30. If the present time is 10:45 and you press the OTR OFF button once, your first timer recording will be 11:00, and so on. This means that your total possible time is 240 minutes maximum. For example, if the present time is exactly 10:00 or 10:30, you can record for this maximum amount of time.

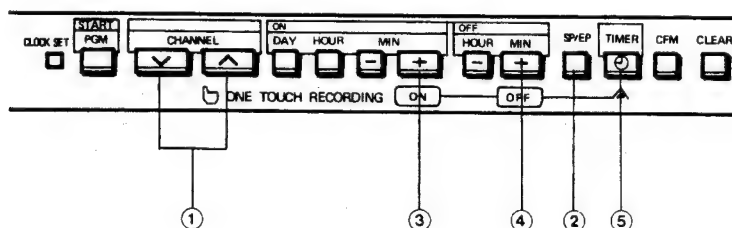
EXAMPLE:

Advances at exactly thirty minute intervals after going pressed twice.	1) Present time 10:29 AM (1 minute)	2) Present time 10:01 AM (29 minutes)
	When the button is pressed once→10:30 AM pressed twice→11:00 AM pressed 3 times→11:30 AM pressed 8 times→2:00 PM pressed 9 times→Counter display	When the button is pressed once→10:30 AM pressed twice→11:00 AM pressed 3 times→11:30 AM pressed 8 times→2:00 PM pressed 9 times→Counter display.

Your minimum recording time is one min. Your maximum recording time is four hours.

One Touch Timer Recording II (Within 24 hours)

Use this procedure when you want to make a recording within twenty-four hours and do not have the time (patience) to set the Programmable Timer in the conventional way.



① CHANNEL Buttons

Used to set the TV channel to be recorded.

② Tape Speed Selector

Pressed to set the tape speed to SP or EP.

③ OTR ON Button

Used to set the time when you want the timer to begin recording. When the button is pressed once, thirty minutes will be added to the closest previous hour or half hour to your present time.

④ OTR OFF Button

Used in OTR II to set the stopping time. When the OTR OFF button is pressed, the time advances at intervals of thirty minutes from the time set by the OTR ON button.

⑤ TIMER Button

Pressed when the recording time has been set to begin the OTR recording cycle.

NOTE

Make sure that OTR is set in correct order so that it will work correctly.

EXAMPLE: To record Channel 4 starting from 10:00 am to 11:00 am (Example: present time 7:10 am, tape speed SP).

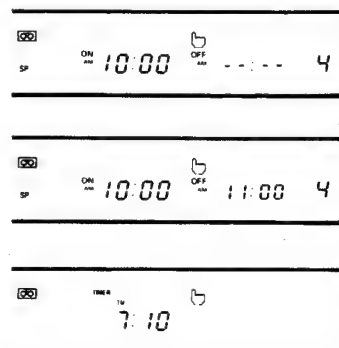
1 Make sure that the power is ON and set the TV channel to Channel 4.

2 Set the tape speed to SP.

3 Press the OTR ON button ③. Set the timer to 10:00 am. At this time the symbol will appear on your multi-display. Press the OTR ON button ③ once and the display will show the time 7:30 am. Press the button five more times and the display will have reached the 10:00 am setting. After the OTR ON time reaches 24 hours from the present time, the timer will return to the clock mode.

4 Press the OTR OFF button ④ to set the stopping time at 11:00 am. Pressing the button once will set the time ahead thirty minutes. Recording time is limited to four hours.

5 Press the TIMER button ⑤ to set the OTR to the Stand-by mode. When the present time reaches the preset OTR ON time, the VCR timer will automatically record the preset program while the VCR is unattended.






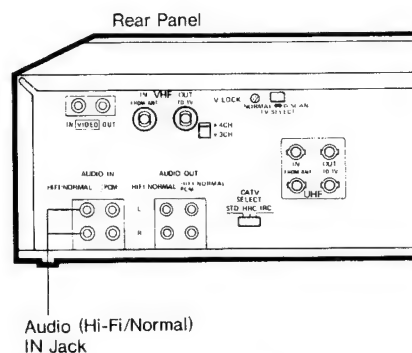
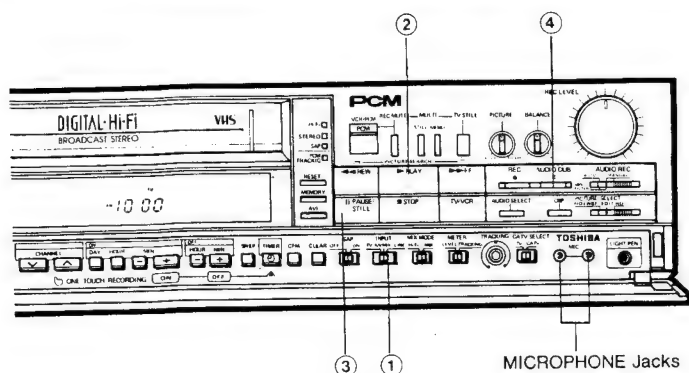
IMPORTANT: If you do not press the TIMER button within nine seconds after setting the OTR OFF time, the preset time will be cancelled and the display returns to the normal clock mode.

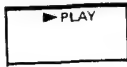



Audio Dubbing

This VCR is equipped with an After Recording function which allows you to add sound only, on tape which has been recorded. You can add music or sound effects to match the recording contents, or make your own commentaries, or whatever you wish.

Using the After Recording Function

<p>1</p> <p>Connect the microphone to the microphone jacks to use it during after-recording. To use audio equipment during after-recording, connect it to the AUDIO (Hi-Fi/normal) IN jack. Set the INPUT SELECT switch ① to the LINE position.</p>	<p>2</p> <p>Turn the TV on and set the VCR output channel (3 or 4).</p> 	<p>3</p> <p>Correctly insert the recorded tape for after-recording.</p>  <p>NOTE: After-recording cannot be done on tapes which do not have the safety tab attached.</p>	<p>4</p> <p>Check the PCM Display.</p>  <p>If the PCM lamp is on, then turn it off by pressing the VCR/PCM switch button.</p>
--	--	--	---



<p>5</p> <p>Press the PLAY button ②.</p> 	<p>6</p> <p>When you want to start audio dubbing, press the PAUSE/STILL button ③ and the frame then showing will be partially frozen.</p> 	<p>7</p> <p>Press the AUDIO DUB button ④ to enable the After Recording function.</p> 	<p>8</p> <p>Press the PAUSE/STILL button ③ to start audio dubbing.</p> 
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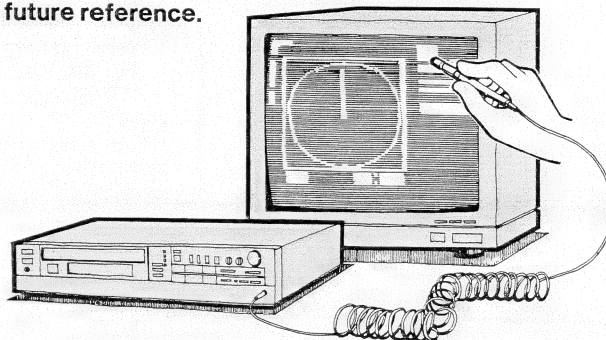
NOTES

- The After Recording function does not work for TV sound.
- Sound only cannot be entered into a tape which has not already been video-recorded.
- When after-recording, only the normal sound track is recorded (monaural). Hence, if after-recording is performed on tape already recorded in Hi-Fi, the picture and the sound (Hi-Fi sound) will remain.

How to Use the Timer Screen

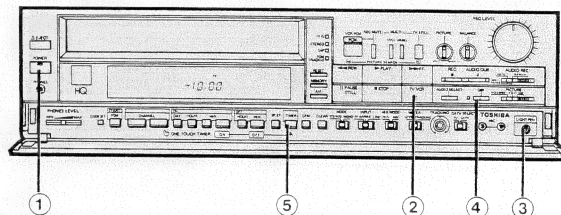
Using a light pen, timer reservations may be made on the TV screen with this VCR. It is a simple operation of following the color instructions, displayed in characters and figures, necessary for timer reservation and touching the TV screen with the light pen. Please read the section "How to Use the Timer Screen" and the separate owner's manual before using this VCR, so that you can get the best use out of the functions.

Retain this information for future reference.



Before Using the Timer Screen

1. Turn on the TV power, and set the VCR output channel (Channel 3 or 4).
2. Turn on the VCR power ①, and set the TV/VCR button ② to VCR.
3. Connect the light pen to the light pen jack ③ on the VCR.
4. Press the OSP button ④. The initial screen (Clock Set Mode) is displayed on the TV screen.



This initial screen is displayed before the clock has been adjusted, either when the power plug is first connected to the power outlet, or after a power interruption.

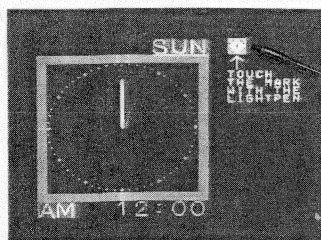
NOTE:

If the time is not set, the other screens are not displayed.

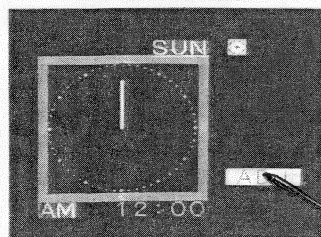
NOTES


- Since the light pen is made of optical fibers, do not forcefully bend or stretch it as this may cause the performance to degenerate or the light pen to be unplugged.
- Hold the plug when removing the light pen. Pulling on any part other than the plug is dangerous as the plug will fly out of control.

How to Set the Present Time (taking the example of 2:20 p.m., Wednesday)



The initial screen

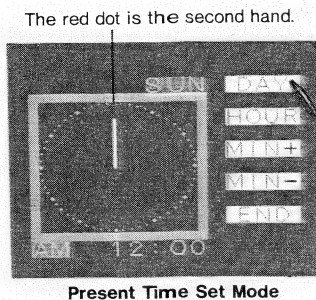


First, press the  mark with the light pen. The ADJ screen will replace the initial screen.

Second, press ADJ with the light pen. The PRESENT TIME SET Mode will appear.

NOTE:

For each light pen operation, press the center of the white frame. If the operation is correct, a short confirmation tone, "beep," will sound.



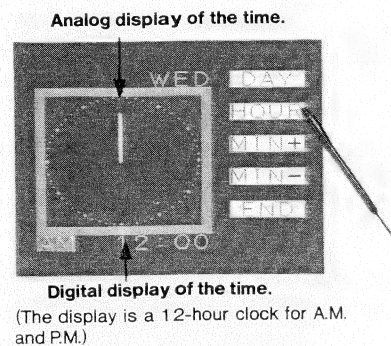
Day display. This display is adjusted by pressing DAY with the light pen.

Press DAY and set the day.

Each time the DAY is pressed, the DAY display is changed in the following manner.

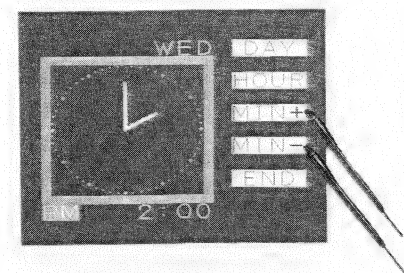
SUN → MON → TUE → WED → THU → FRI → SAT

If the light pen is kept pressing against DAY, the display will keep on changing (in this case, the short confirmation tone, "beep," will sound only in the beginning).



Press HOUR to set the hour.

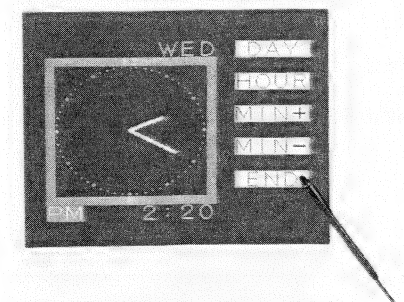
Both the analog display and digital display will advance in one-hour increments.



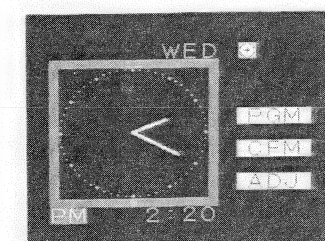
Press MIN+ or MIN- to set the minute.

When MIN+ is pressed, the display advances in one-minute increments (0 → 1 → 2 → 3 → ...).

When MIN- is pressed, the display regresses in one-minute increments (59 → 58 → 57 → ...).



Press END (you may want to push time report at the same time).



The clock will begin to move.

(The red second hand should move first)

The present time is now set.

The screen will change to the CLOCK & MENU screen.

NOTES:

- In setting the time, if the VCR's TIMER SCREEN button is pressed without pressing END, the screen will return to showing the TV program; however, the time setting mode is not cancelled, and the VCR's timer display section will flash and the clock will not move. In this case, press the VCR's CLOCK SET button at the same time the Time Report, etc., is pressed. At the same time the clock starts to move from 0 second, the timer display's light will cease to flash.
- If the TIMER SCREEN button is repeatedly pressed a few times, the number of times the button has been pressed is stored in the memory. Therefore, the screen display may not change or the screen may not return to show TV programs. Press the TIMER SCREEN button slowly and once at a time.
- In the TIMER SCREEN mode, pressing any of the PLAY, REC, or TV STILL will cancel the TIMER SCREEN mode.

How to Set the Timer

Set the timer reservation in the following order:

PGM NO → DAY → CH → ON Time (HOUR) → ON Time (MIN) → Tape Speed → END Time (HOUR) → END Time (MIN)

Types of recording date are as follows:

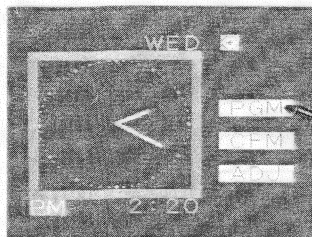
Specified day in the first week, specified day in the second week, same day of every weekly, weekdays (MON-FRI), and everyday.

If the present day is Wednesday, the first week is that Wednesday through to Tuesday.

The second week is from the following Wednesday through to the next Tuesday.

The explanation here uses the example of setting the timer for Program 2, SP Mode, on Channel 28, from 7:30 p.m. to 8:50 p.m. on the 2nd Wednesday (We will suppose the present time to be Wednesday, 2:20 p.m.)

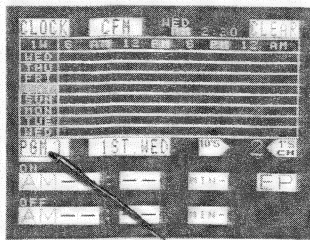
1. Press PGM.



CLOCK & MENU SCREEN

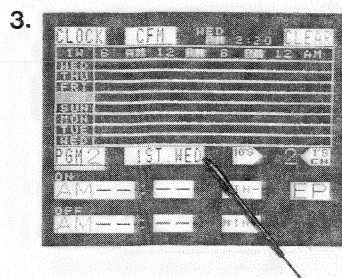
The screen is changed to the RESERVATION SCREEN mode.

2. The calendar will always first display the current day. Since the example day is Wednesday, the uppermost row of the calendar is displaying WED.



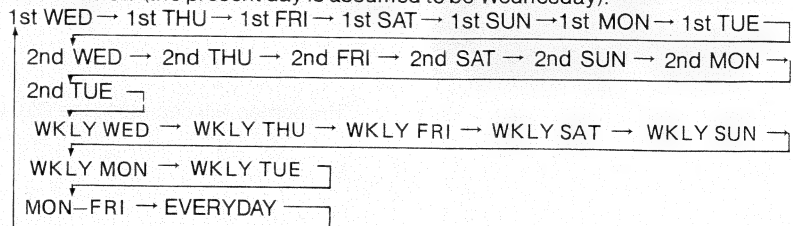
Press PGM 1 once to change to PGM 2.

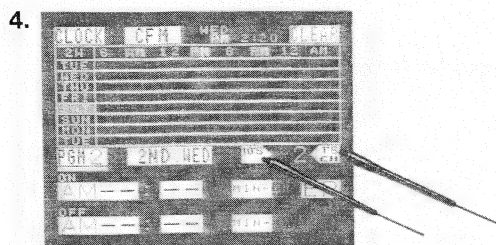
(Pressing it twice changes the mode to PGM 3; three times to PGM 4; and four times to return to PGM 1.)



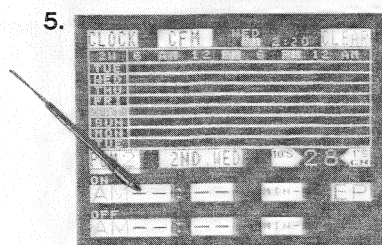
Press 1st WED to change it to 2nd WED.

By continuously pressing the area for day setting, the display will change as shown below (the present day is assumed to be Wednesday).

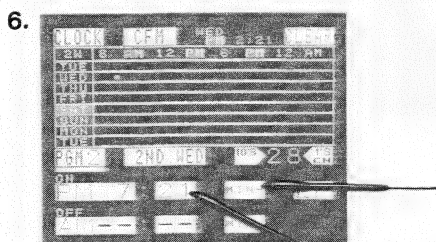




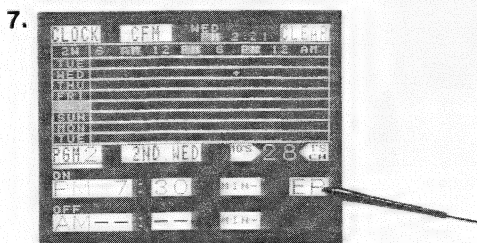
Press 10's and 1's to set the channel.
Press 10's twice to set the tens to 2, and press 1's six times to set the ones to 8 to set channel 28.



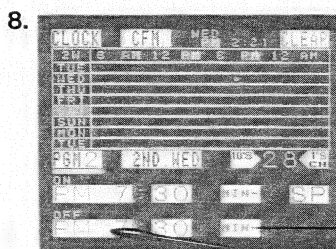
Press "ON AM--" to set the PROGRAM TIMER's starting time.
Pressing it once displays the present time (2 P.M. in the example).
After the PM2 is displayed, press five more times to set it to PM7.



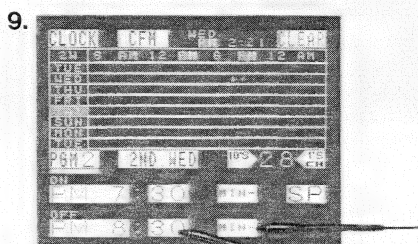
Press MIN cursor or MIN- to set the starting time's minute "30".



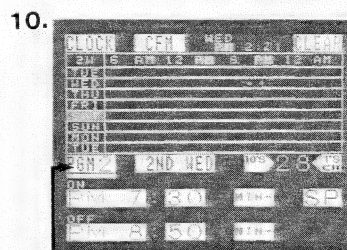
Press EP to set the tape speed to SP (EP and SP are alternately displayed when this area is pressed).



Starting time is initialized.
Press "OFF AM--" to set the ending hour of the program timer, "PM8".



Press MIN cursor or MIN- to set the ending minute "50".



The timer reservation periods are graphically displayed on the calendar.

Colors are displayed under the reservation numbers.

Reservation 1	Reservation 2	Reservation 3	Reservation 4
Yellow	Pink	Green	Sky blue

Press PGM2 again.
The PGM2 display will change to PGM3 display.
The program timer reservation is now completed.

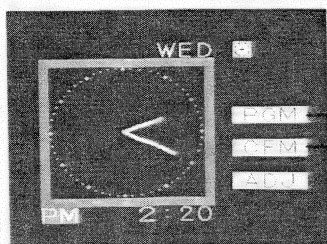
If you wish to make recording settings for the remaining three program numbers, repeat the above method.

After timer reservation process has been completed, press the OSP button ④ on the VCR unit.
The TV screen will return to showing normal TV programs. Install a cassette in the VCR and press the Timer button ⑤ on the VCR.
The timer is set in the recording standby mode, and the recording will be automatically started at the reserved time.

If nothing is inputted in the RESERVATION SCREEN mode for one minute, the screen will automatically change to the CLOCK & MENU screen.

Revising, Cancelling and Confirming the Program

First, press the OSP button ④ and call the CLOCK & MENU screen to the TV screen.



CLOCK & MENU SCREEN

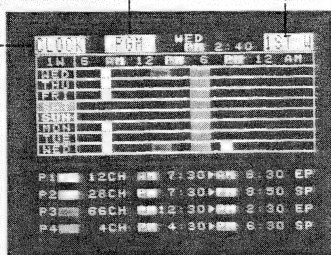
Confirming the reservation contents.
Pressing CFM will change the screen to the CONFIRM screen.

Revising or cancelling the reservation contents.
Press PGM to change the screen to the RESERVATION SCREEN.

By pressing "1st W" once more, the screen will change to the 2nd week CONFIRM SCREEN.

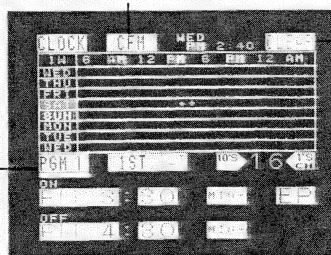
Press PGM to change the screen to the RESERVATION SCREEN.

Press CLOCK to return to the CLOCK & MENU SCREEN.



CONFIRM SCREEN/1st Week

Press CFM and change it to the CONFIRM screen.



RESERVATION SCREEN

CLEAR

Cancellation

1. Press PGM1 and set the program number you wish to cancel.
2. Press CLEAR.

Revision

1. Press PGM1 and set the program number you wish to revise.
2. Press the appropriate areas to make the necessary revisions.

By pressing the VCR's OSP button once, the first week's CONFIRM screen will appear. By pressing the button twice, the second week's CONFIRM screen will appear. By pressing the button three times, the screen will return to show the TV program.

NOTES

Instead of pressing "1st W" and "2nd W" with the light pen, the CONFIRM SCREEN may be called with the remote control and the VCR unit's OSP button as well. By pressing the OSP button once after the CLOCK &

MENU SCREEN the screen changes to the 1st week CONFIRM SCREEN. By pressing it twice, the 2nd week CONFIRM SCREEN will appear. By pressing it once more, the normal TV program will appear.

NOTES

- Press the light pen perpendicular to the screen. If the light pen is pressed diagonally to the screen, a wrong mode may be activated.
- The light pen may not function properly if the TV screen is dirty or the screen is extremely dark.
- Operate the TIMER SCREEN in the STOP mode.
It will not function during recording, playback, or TV still picture mode.
- When using the light pen, first press it against the TV screen's starting position, ⊕. If the TV is changed, correct the pen position after placing it against the screen display's ⊕ position.
- Video timer display will display ≡≡≡ when the unit's in the TIMER SCREEN mode, and the VCR's TIMER function buttons will not function.
- When you use a double scanning TV set, set the TV select switch on the back of the VCR to the double scanning side.

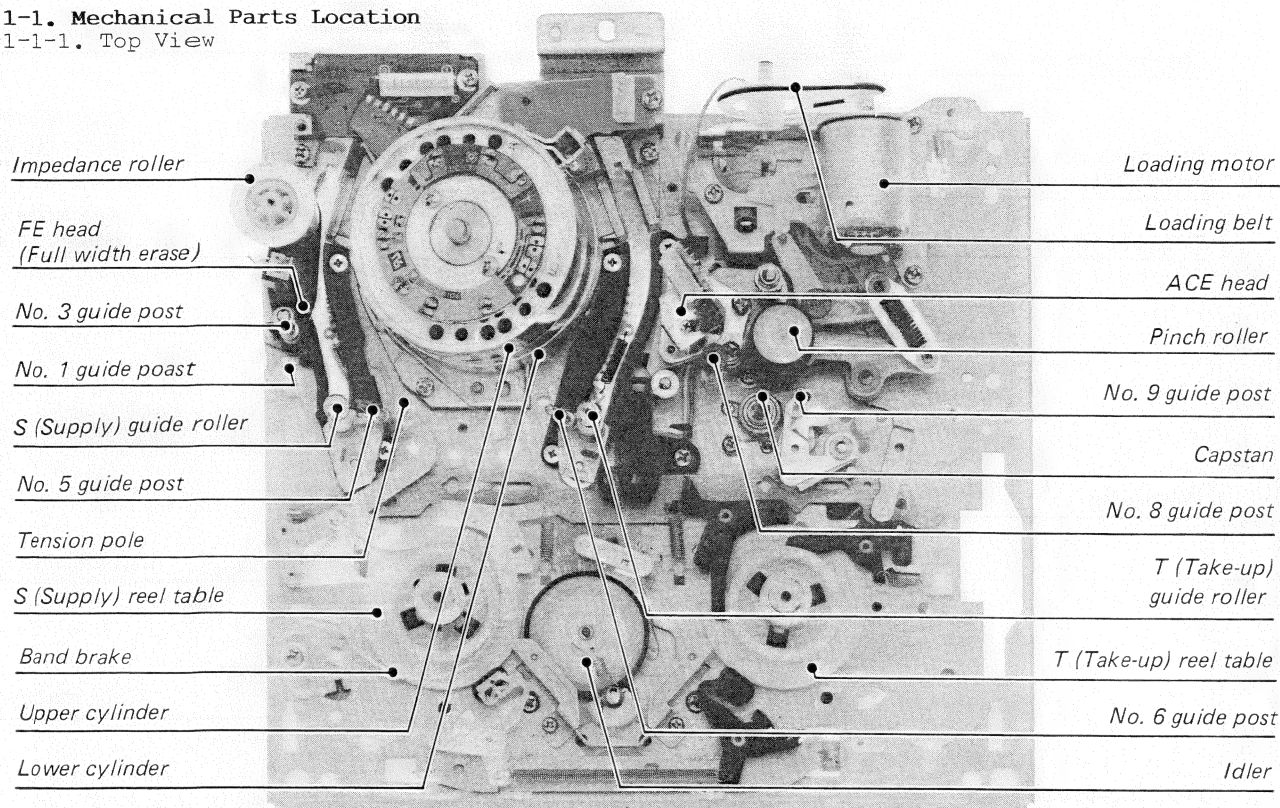
SECTION 2

ADJUSTMENT PROCEDURES

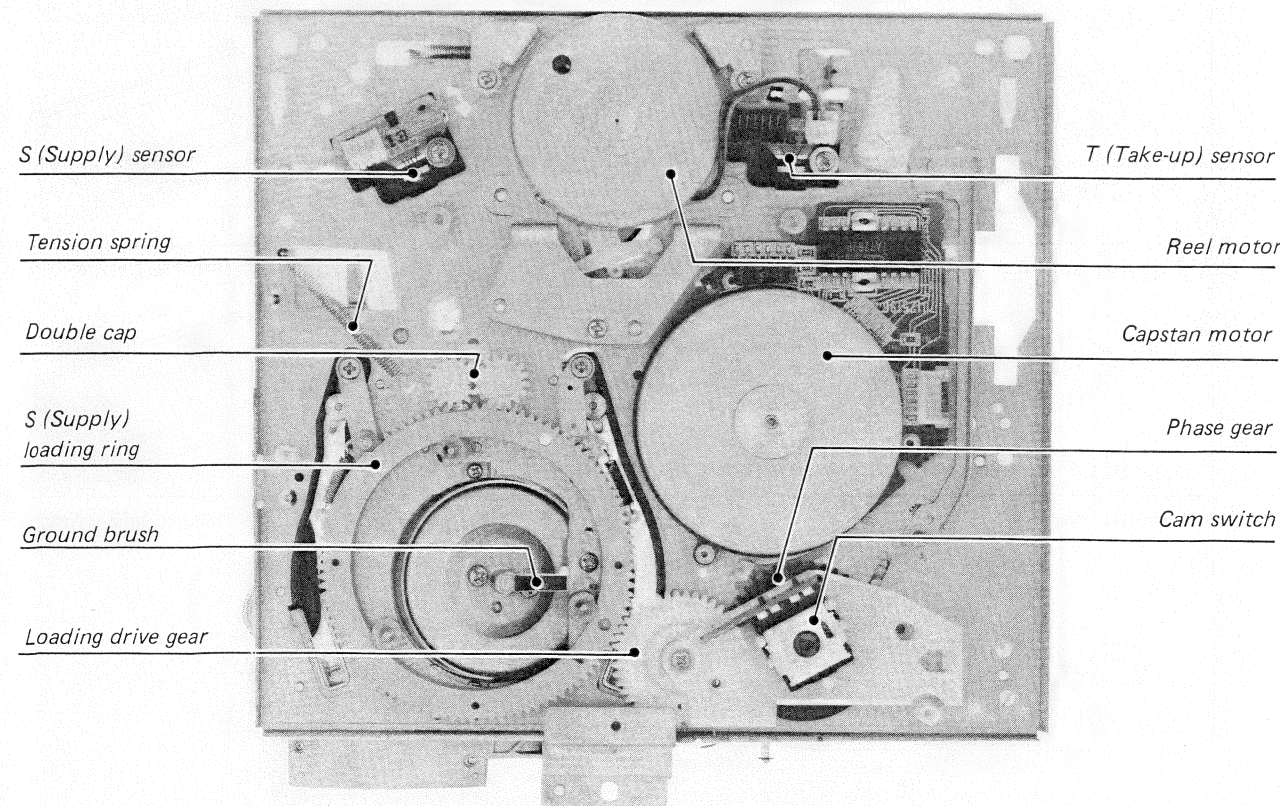
1. MECHANICAL ADJUSTMENT

1-1. Mechanical Parts Location

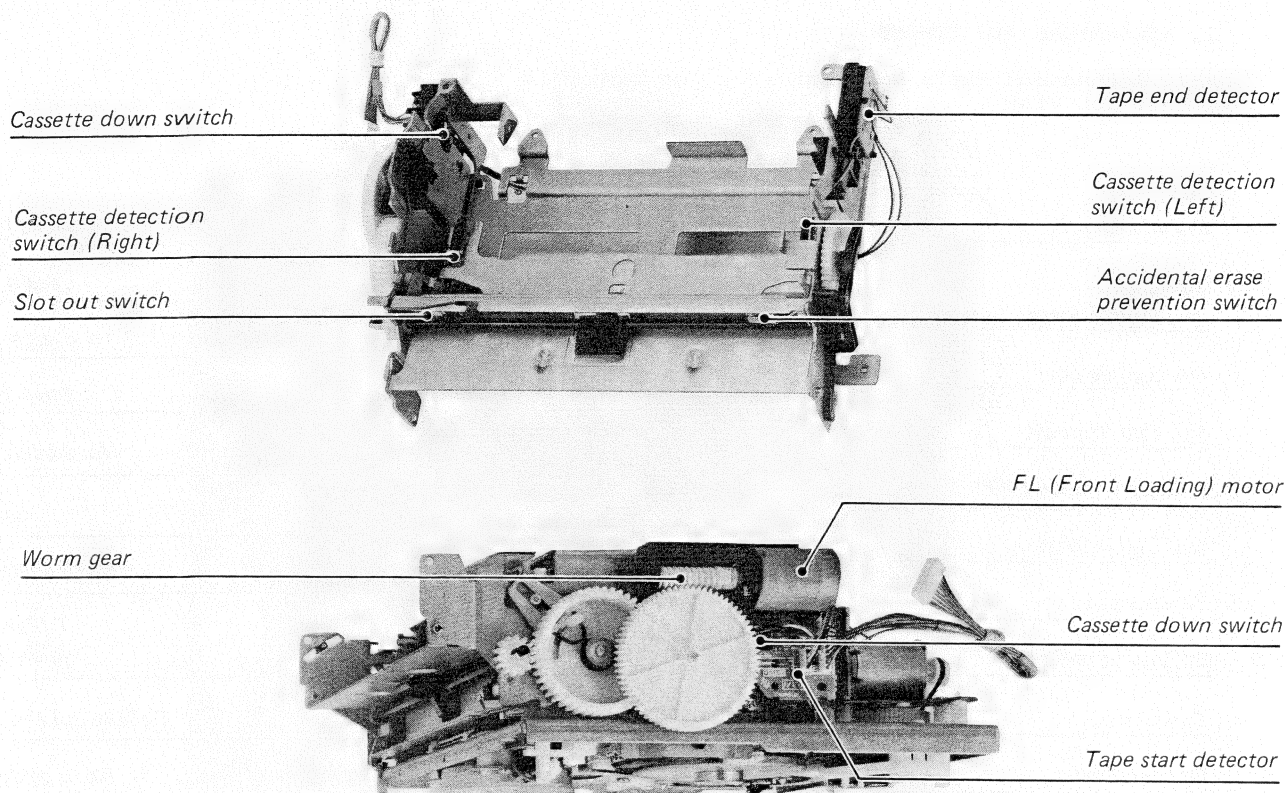
1-1-1. Top View



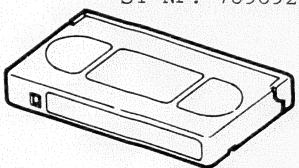
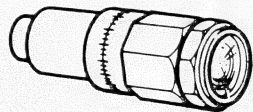
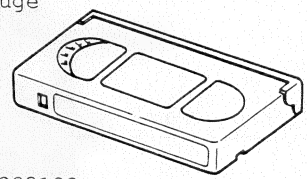
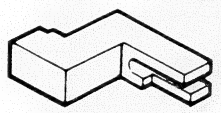
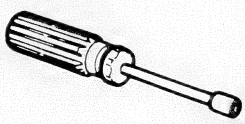
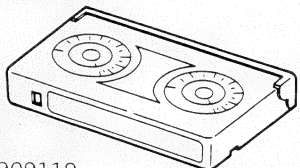
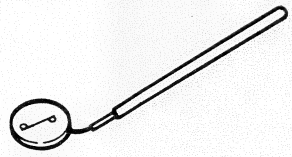
1-1-2. Bottom View



1-1-3. Front Loading Mechanism



1-2. Servicing Jig List

<p>Alignment tape ST-N1: 70909202 ST-NF: 70909203</p> 	<p>Torque gauge</p>  <p>70909098</p>	<p>Back tension cassette gauge</p>  <p>70909103</p>
<p>Height gauge</p>  <p>70909113</p>	<p>Taper nut driver</p>  <p>70909162</p>	<p>Torque cassette gauge (KT-300NR)</p>  <p>70909119</p>
<p>Dental mirror</p>  <p>70954003</p>	<p>MH-1 (70909110) or MH-1L (70909111) can be used instead of alignment tape ST-N1.</p>	

1-3. Main Parts Replacement

1-3-1. Front Loading

(1) Front loading assembly <Replacement>

1. Disconnect the relay cable connector from the Logic P.C. board.
2. Loosen 2 mounting screws on the deck top shield plate, and remove the shield plate.
3. Remove 2 screws securing the front loading assembly on the base.
4. First, pull the front loading assembly forward, unhook claws from the holes on the main base, and then take out the loading assembly upward, and replace it.

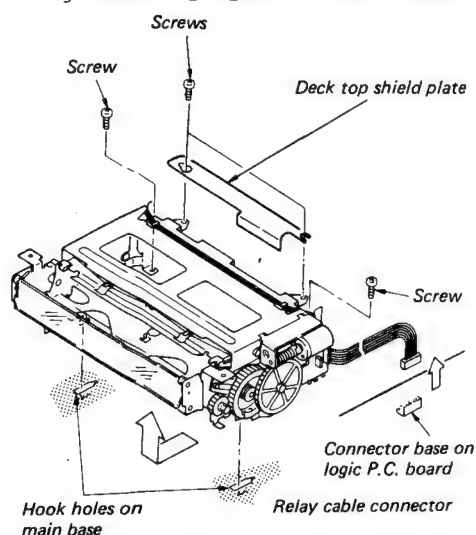


Fig. 1-3-1 Front loading assembly replacement

(2) Door <Replacement>

1. Make sure the cassette holder is in the cassette eject position.
2. Turn the cassette door until the left door shaft matches its receptacle of the door bracket, and then slide the door rightward.
3. Warp the door forward at its center and disengage the left side of the door from the door bracket. Move the door left side to remove it.
4. Remove a door spring from the right door shaft and replace it. Apply slight amount of grease on both shafts of the door to replace.

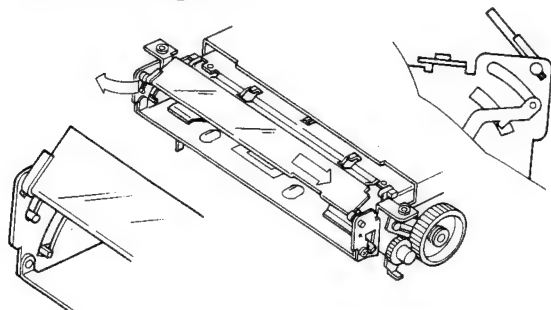


Fig. 1-3-2 Door replacement (1)

5. Insert the door spring into the right door shaft of the new door.
6. Insert the tip of door spring into the spring hook (hole) on the guide bracket, and insert the right door shaft into the guide bracket.

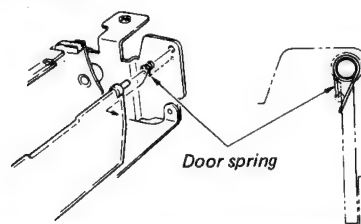


Fig. 1-3-3 Door replacement (2)

7. Insert the left door shaft into the guide bracket while warping the door slightly forward. In this case, make sure that the door lever pin is positioned as shown in Fig. 1-3-4.

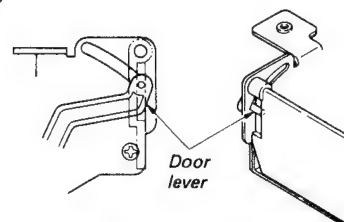


Fig. 1-3-4 Door replacement (3)

(3) Cassette detection switches, L, R <Replacement>

1. Remove the front loading assembly from the chassis.
2. Place the front loading assembly upside down.
3. Unsolder leads from the switch terminals using a soldering iron. In this case, the unsoldering work will be made easily if the cassette holder is moved down by rotating the coupling section of the worm gear and the motor. (Do not touch your hand to gear teeth.)
4. Remove screws securing the switches and replace the switches.
5. When mounting new switches, perform the above previous steps in reverse order.

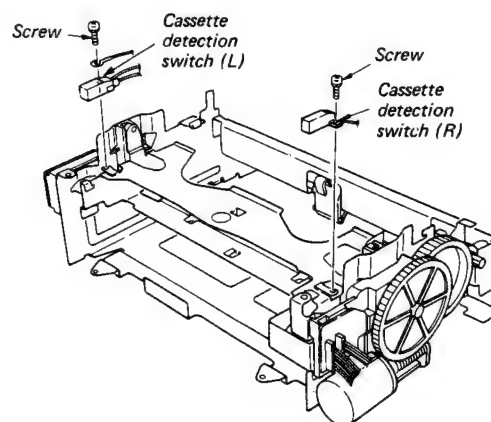


Fig. 1-3-5 Replacement of cassette detector

(4) Cassette down switch

<Replacement>

1. Remove the front loading assembly from the chassis.
2. Remove the FL P.C. board (R) unhooking the mold claws on the guide R.
3. Remove the screw securing the switch and take out the switch.
4. Unsolder the leads from the switch terminals using a soldering iron.
5. When remounting a new switch, perform the previous steps in reverse order.

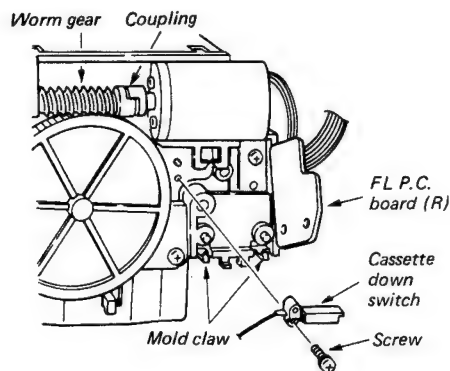


Fig. 1-3-6 Cassette down switch replacement

(5) Slot out switch and accidental erase prevention switch

1. Remove the front loading assembly from the chassis.
2. Place the loading assembly with the door facing upward.
3. Unsolder the leads from the switch terminals, using the soldering iron.
4. Remove the screw securing the switch.
5. When mounting the switch, perform the previous steps in reverse order.

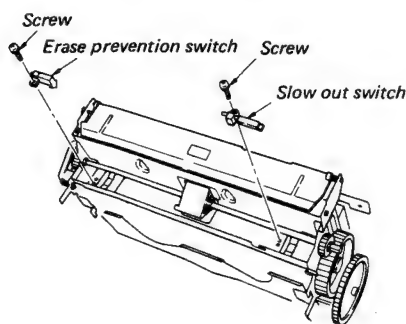


Fig. 1-3-7 Replacement of slot out switch and erase prevention switch

(6) FL motor assembly

<Replacement>

1. Remove the front loading assembly from the chassis.
2. Unsolder the leads from the motor terminals, using the soldering iron.
3. Remove the screws securing the FL motor assembly on the guide R and remove the assembly.

4. When mounting the assembly, perform the previous steps in reverse order.

Note:

When replacing the FL motor, always use a motor with a label in green letters. Do not use any other motor.

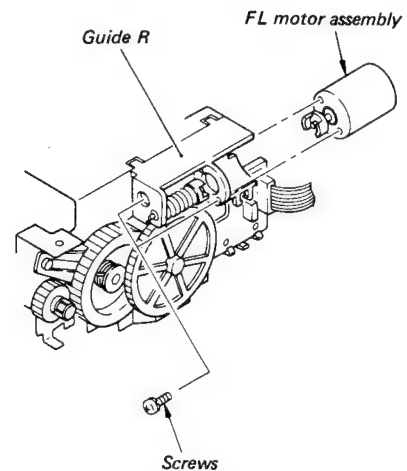


Fig. 1-3-8 Replacement of motor assembly

(7) Photo transistor

<Replacement>

1. Remove the front loading assembly from the chassis.
2. Remove the FL P.C. board (R) unhooking the mold claws on the guide R.
3. Unsolder the photo transistor from the FL P.C. board, using the soldering iron.

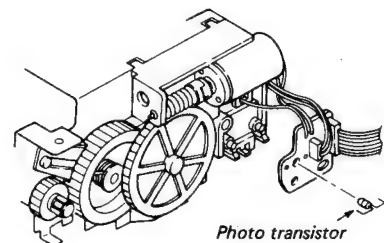


Fig. 1-3-9 Replacement photo transistor on FL P.C. board (R)

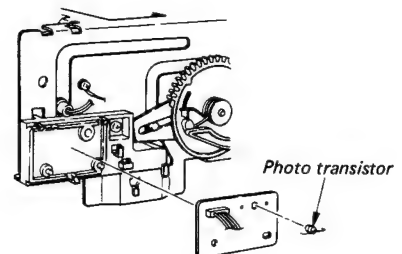


Fig. 1-3-10 Replacement of photo transistor on FL P.C. board (L)

4. Bend leads of a new photo transistor as shown in Fig. 1-3-11.
5. When remounting the transistor, perform the previous steps in reverse order.
6. The replacement method will apply to both the photo transistors on the left and right FL P.C. boards.

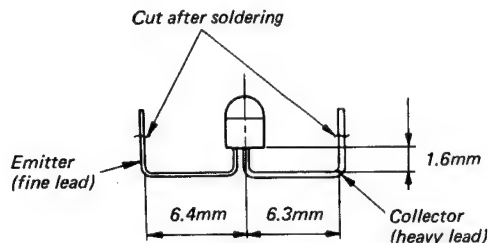


Fig. 1-3-11 Forming of photo transistor leads

1-3-2. Cylinder

(1) Upper cylinder assembly

<Inspection>

1. Check if video heads are damaged or worn out.
2. Check video heads clogging.
(Replace the upper cylinder assembly if the clogging is not remedied after cleaning.)

<Replacement>

1. Unsolder the relay terminals (at the marks W, 2 pairs - in total 4 locations) on the head relay P.C. board. The solder will be removed easily using a desoldering wire (Fig. 1-3-12/1-3-13).
2. Remove two screws (A) and remove the upper cylinder assembly.
3. Clean a new upper cylinder assembly and the surface of the flange before mounting, using a cleaning kit.
4. Align phases of the white part of Head relay P.C. board and Rotary transformer (A) P.C. board and then mount the upper cylinder.
(Tightening torque; 3 - 4kg-cm.)
5. Perform the tape transport adjustment.

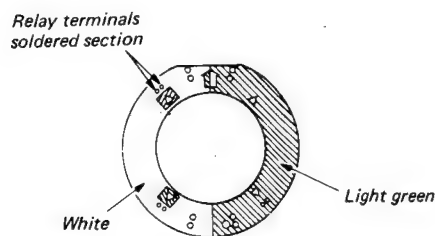


Fig. 1-3-12 Head relay P.C. board

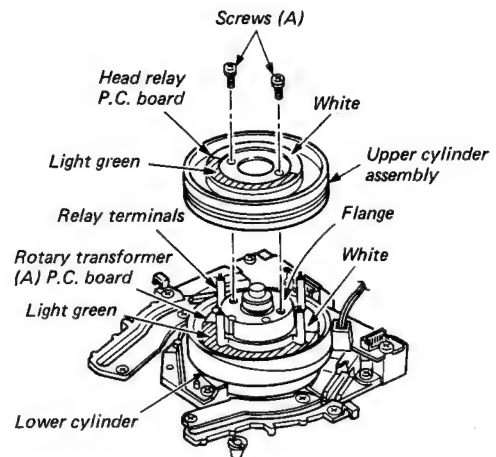


Fig. 1-3-13 Upper cylinder replacement

(2) Cylinder motor

<Inspection>

1. Apply power to the cylinder motor separately.
2. If the motor does not rotate, replace the rotor or the stator.

<Rotor replacement>

1. Remove the ground cap.
2. Remove two rotor screws and replace the rotor.
(Tightening torque; 3 - 4kg-cm.)

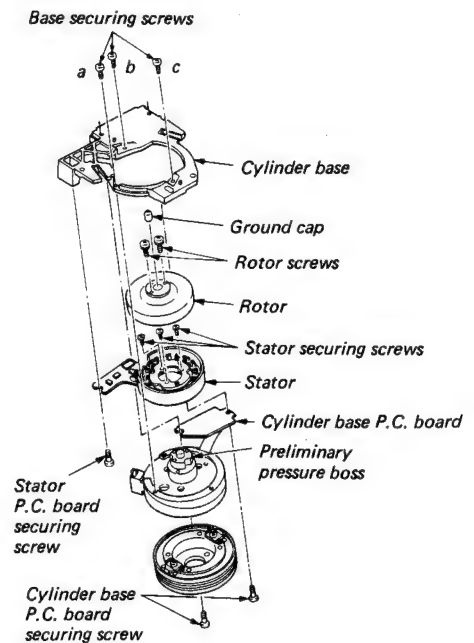


Fig. 1-3-14 Cylinder motor replacement

Note:

Mount a new rotor, matching the phase decision holes of rotor and preliminary pressure boss. (Fig. 1-3-14, 15)

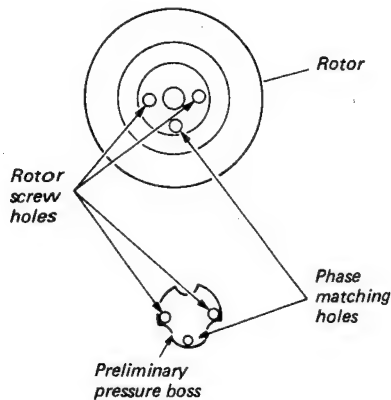


Fig. 1-3-15 Phase matching between rotor and preliminary pressure boss

<Stator replacement>

1. Remove the cylinder assembly. (Refer to 1-3-2(3))
2. Remove two cylinder base P.C. board securing screws and stator P.C. board securing screw (Fig. 1-3-16).

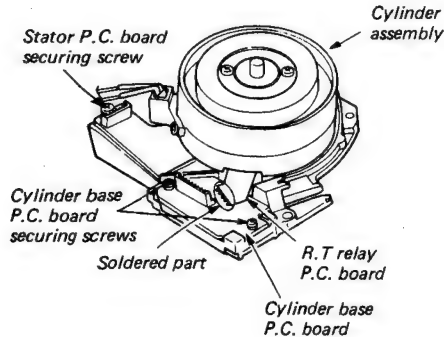


Fig. 1-3-16 Relay P.C. board and cylinder base P.C. board

Note:

In this case, take care not to damage patterns of the R.T relay P.C. board. Also handle the cylinder base P.C. board carefully so that the cylinder is not damaged with the P.C. board.

3. Remove three base securing screws and remove the cylinder base. (Fig. 1-3-14)
4. Remove the rotor screws and the rotor. (Fig. 1-3-14)

Note:

Follow the procedures under "<Rotor replacement>".

5. Remove the stator securing screws.
6. Pull out the stator and replace it. (Tightening torque 1.5 - 2.5 kg-cm)
7. When mounting the cylinder assembly, perform the previous steps in reverse order.

Note:

Sequence of tightening base securing screws: tighten the screw a first, b and c in any order. (Tightening torque is 3 - 4 kg-cm.) (Fig. 1-3-14)

8. Perform the tape transport adjustment.

(3) Cylinder assembly**<Inspection>**

1. Check to see that rotating surface of the lower cylinder has no damage such as scratches, cracks, etc.
2. Check to see smooth rotation of the upper cylinder. If abnormality is found, replace the cylinder(s).

<Replacement>

1. Remove the Pre Amp P.C. board, 6P connector (Hi-Fi audio head), 6P connector (cylinder motor), and the dew heater.
2. Remove three screws (A).
3. Remove the cylinder assembly.

Note:

In this case, move the impedance roller in direction shown by the arrow.

4. Align position of a new cylinder to the cylinder base, taking care not to touch the video heads directly and not to damage the cylinder surface. When mounting the cylinder assembly, perform the previous steps in reverse order.
5. Perform the tape transport adjustment.

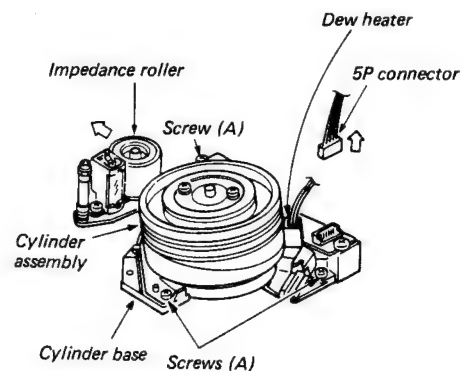


Fig. 1-3-17 Cylinder assembly replacement

1-3-3. Transport System Parts Replacement

(1) ACE head assembly replacement

1. Disconnect a 6P connector from the ACE P.C. board.
2. Turn the ACE height adjusting nut counterclockwise and remove the nut in order to remove ACE base assembly. (Fig. 1-3-18)

Note:

Note positions of the ACE base and the taper nut.

3. Remove the E-ring and the ACE azimuth adjusting screws in order to remove the ACE head assembly.
4. Remove the ACE P.C. board from the ACE head assembly.
5. Replace the ACE head assembly, according to the reverse procedures.
6. Rotate the ACE height adjustment nut until the ACE base and the upper position of the taper nut have the same position as noted in the step 2.
7. After mounting, perform the tape transport adjustment, starting from the first step.

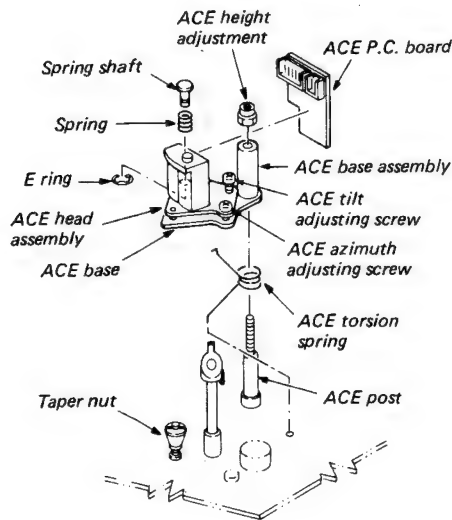


Fig. 1-3-18 Replacement of ACE head assembly

Note:

- * Since direct mounting of the ACE torsion spring is difficult, first insert the tip of the spring into the hole on the main base and then hook the opposite tip of the spring to the ACE base which has been inserted into the ACE post.
- * When replacing the ACE head assembly, always use an ACE head with a green label. Do not use any other ACE head assembly.

(2) Guide sleeve replacement

<No. 3 guide sleeve replacement>

1. Rotate the No. 3 guide nut counterclockwise and remove the No. 3 guide nut and flange as shown in Fig. 1-3-21. When replacing a new flange, perform the previous steps in reverse order.
2. After the replacement, preset height of the lower flange as shown in Fig. 1-3-19, using the guide height gauge.
3. After completion of preset, perform adjustments by following the procedures for Linearity Adjustment, item 4) of the Tape Transport Adjustment. (Refer to 1-4-4 (3).)

Note:

The flange arranged in upper and lower positions are common parts and can be used either place and upside down. (Fig. 1-3-21)

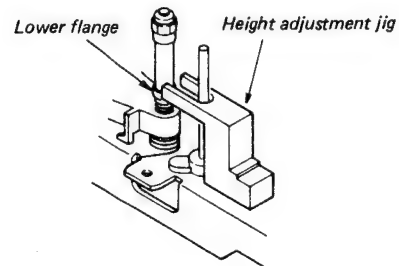


Fig. 1-3-19 No. 3 guide preset

<No. 8 guide sleeve replacement>

1. Remove No. 8 cap through the No. 8 lower flange in this sequence as shown in Fig. 1-3-20. When reassembling, perform the previous steps in reverse order.

Note:

When mounting the No. 8 guide cap, mount it with its slant surface facing to the cassette side.

2. After completion of this replacements, perform adjustments by following the procedures for the linearity adjustment, item 4) of the transport adjustment. (Refer to 1-4-4 (3))

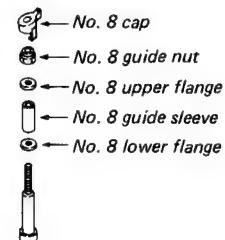


Fig. 1-3-20 No. 8 guide replacement

(3) FE head replacement

1. Disconnect the 2P connector of the FE head.
2. Remove the FE head mounting screw and the FE head can be removed. (Fig. 1-3-21)
3. Replace the new FE head and tighten the FE head mounting screw.
4. Connect 2P connector.
5. The replacement of the FE head causes little change in linearity. But confirm whether the associated adjustments have not been upset, starting check from the linearity adjustment, item 4) of the tape transport adjustment. (Refer to 1-4-4 (3).)

(4) Impedance roller replacement

1. Remove the washer and replace the impedance roller as shown in Fig. 1-3-21.

Note:

The polyslider must be inserted between the impedance roller and the entrance lever, take care not to miss it. An impedance roller with scratches may damage the tape, so handle it carefully. If your fingers touch the surface of the impedance roller, clean the surface with alcohol.

2. After replacement of the impedance roller, perform the adjustment from the linearity adjustment, item 4) in the tape transport adjustment. (Refer to 1-4-4 (3).)

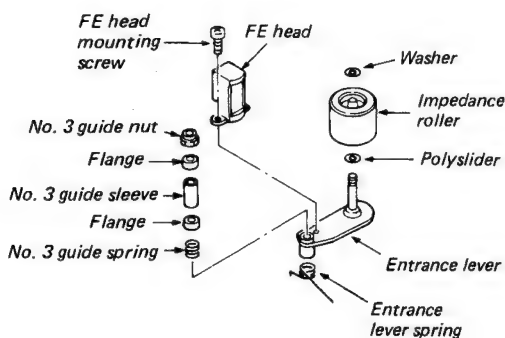


Fig. 1-3-21 Replacement of No. 3 guide and FE head

(5) S, T-guide rollers replacement

The same replacement procedures will be applied for both S and T-guide rollers.

1. Loosen the set screw shown in Fig. 1-3-22.
2. Turn the guide roller counterclockwise and remove it.
3. As the O-ring may stick to the guide roller when removed, remove the O-ring and install it on the new guide roller.
4. When remounting, perform the previous steps in reverse order.

Note:

When tightening the set screw, temporarily tighten it with light pressure. If it is tightened too hard, associated adjustments can not be made.

The S-guide roller has a red mark on upper flange and the T-guide roller has a black mark on upper flange. Do not exchange them when remounting.

5. After completion of the replacement, perform adjustment from the linearity adjustment item 4) in the tape transport adjustment. (Refer to 1-4-4 (3).)

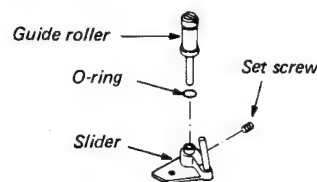


Fig. 1-3-22 Guide roller replacement

(6) S, T-sliders replacement

1. Remove the cylinder assembly.
2. Place the VCR vertically and remove the bottom cover.
3. Remove the connecting screw shown in Fig. 1-3-23.

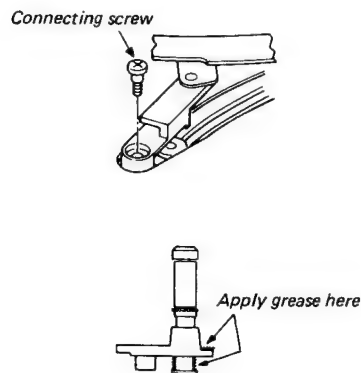


Fig. 1-3-23 S, T-slider replacement

4. Move the slider up to the loading position turning loading motor with your hand, and the slider can be removed.
5. Remove the guide roller and reinstall it in a new slider according to the steps stated in (5).
6. When replacing the slider, perform the previous steps in reverse order.
7. After completion of the replacement, perform adjustment from tape transport system adjustment. (Refer to 1-4-4 (3)).

Note:

When the slider is replaced, always apply grease to the slider as shown in Fig. 1-3-23.

(7) No. 9 guide lever assembly replacement

1. Remove the washer shown in Fig. 1-3-24.
2. Remove No. 9 guide lever assembly shown in Fig. 1-3-24.
3. When replacing, perform the previous step in reverse order.

Note:

When mounting the No. 9 guide lever assembly, temporarily hook section A of No. 9 guide spring at the cutout on No. 9 guide lever and then insert the guide lever assembly into the pin. Then unhook the section A from the cutout.

4. After completion of the replacement, perform adjustment from the item 6) in the tape transport adjustment. (Refer to 1-4-4 (3)).

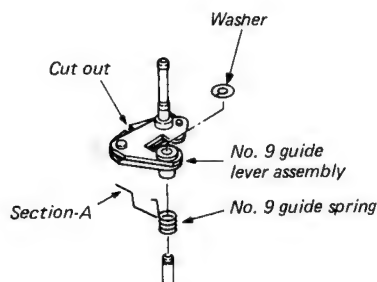


Fig. 1-3-24 No. 9 guide lever replacement

1-3-4. Pinch Roller Assembly Replacement

1. Remove the washer (A) and disconnect the pinch connector from the pinch roller assembly.
2. Remove the washer (B) and remove the pinch roller assembly upward.
3. Clean the pinch post and apply grease on it.
4. Replace the pinch roller assembly according to the previous steps in reverse order.
5. After completion of the replacement, perform adjustment from the item "1-4-4 (3) Tape transport system adjustment".

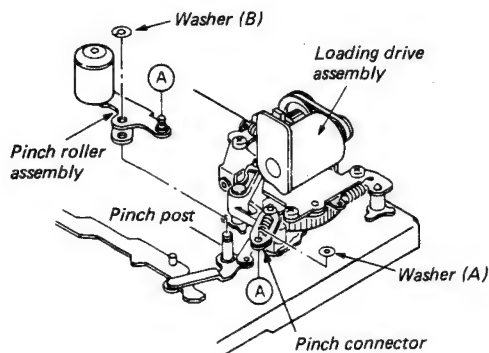


Fig. 1-3-25 Pinch roller replacement

1-3-5. Loading Motor Replacement

1. Remove the motor P.C. board from the motor, taking care not to damage wire leads.
 2. Remove the washer (A) and disconnect the pinch connector.
 3. Remove the cam lever stopper and the washer (B), and remove the cam lever assembly upward.
 4. Turn the gear pulley in direction shown by the arrow until it stops to set the FF/REW mode. (Fig. 1-3-27)
 5. Remove the screws (A) and remove the loading drive assembly.
 6. Remove the loading belt and the screws (B), and remove the motor.
 7. Replace the motor.
- When replacing with a new motor, perform the previous steps in reverse order, taking care of polarities (+ polarity should be located on upside).
8. When mounting the loading drive assembly on the main base, first push the logic slider rightward (shown by the arrow) until it stops, and then mount the drive assembly.
 9. Confirm timing of the phase gear, referring to the item 1-4-1.

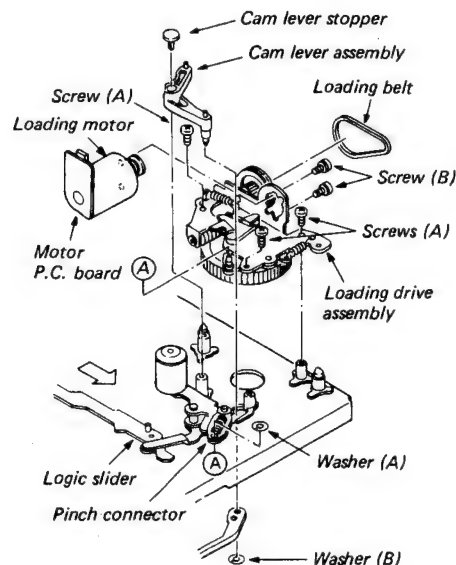


Fig. 1-3-26 Loading motor replacement

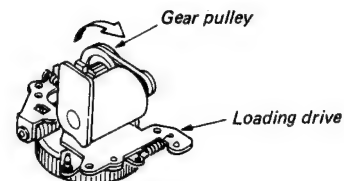


Fig. 1-3-27 Loading drive . FF mode

Note:

When replacing the loading motor always use a loading motor with a label in green letters. Do not use any other motor.

1-3-6. Band Brake Assembly Replacement

1. Remove the S-soft brake assembly.
2. Remove a tension spring from a tension lever.
3. Remove the screw and remove the tension lever and the band brake assembly from the main base.
4. Remove the band brake assembly from the tension lever and replace the band brake assembly.
5. Clean the shaft of the tension lever and then apply one or two drops of oil. When replacing with a new band brake assembly, perform the previous steps in reverse order.
6. After completion of the replacement, check position of the tension pole and its adjustment (refer to item 1-4-2) and check the backtension (refer to item 1-4-3).

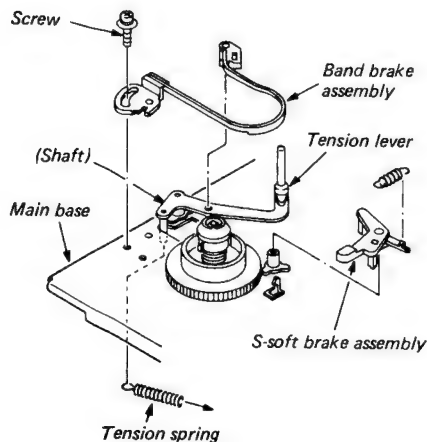


Fig. 1-3-28 Band brake assembly replacement

1-3-7. Cam Switch Replacement

1. Remove the screw and the cam switch bracket.
2. To remove the cam switch, move it upward with a screwdriver while opening the claw of the cam switch bracket.
3. Perform the phase matching adjustment (timing check), referring to the item 1-4-1.
4. Replace the cam switch and mount it on the cam switch bracket.
5. When mounting the cam switch on the phase gear shaft, mount the cam switch while pushing the external rim of the cam switch in the direction shown by the arrow.
(If the hole D of the cam switch and the cutout D of the phase gear shaft are not matched (overlapped), turn the cam switch until the hole D matches.)

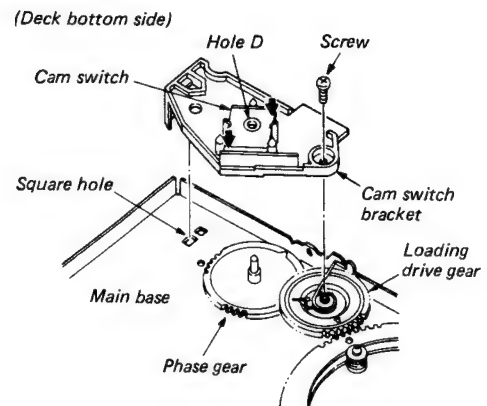


Fig. 1-3-29 Cam switch replacement

1-3-8. T, S-Sensor Assemblies Replacement

1. Disconnect 3P and 6P connectors in T-sensor assembly, and 4P connector in S-sensor assembly.
2. Remove the screws.
3. Remove the sensor assemblies.
4. When reinstalling a new sensor, perform the previous steps in the reverse order.

Note:

Since the Hall element is glued on the sensor holder, take care the hall element is not torn off during installation.

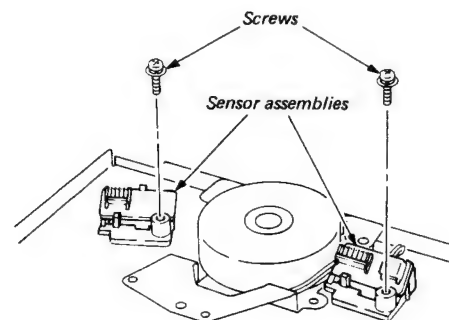


Fig. 1-3-30 Sensor assemblies replacement

1-3-9. Main Brake Assembly Replacement

1. The brake assembly has the mold claws which allow one touch installation or removal.

Note:

When replacing, take care not to touch the brake pad surface.

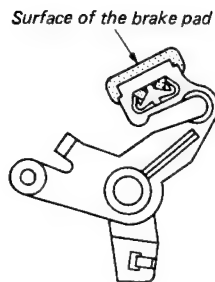


Fig. 1-3-31 Main brake assembly replacement

1-3-10. Ground Brush Replacement

1. Remove a screw and the brush.
 2. Clean the ground cap with alcohol.
 3. Replace the brush.
- Mount a new brush so that it can contact the center of the ground cap.

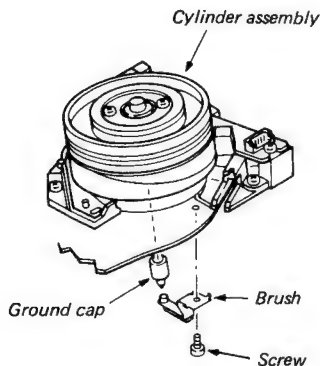


Fig. 1-3-32 Brush replacement

1-3-11. Reel Table Replacement

(1) Supply reel table assembly

1. Remove the S-soft brake spring from the S-soft brake. (Fig. 1-3-33)
2. Remove the S-soft brake.
3. Remove the tension spring from the tension lever.
4. Remove the screw (A), then remove the tension lever and the band brake assembly.

Note:

Take care not to damage the mold claw of the band brake.

5. Remove the washer (A), then remove the S-reel table assembly upward paying attention not to miss the spacers.

Note:

Move the S-brake assembly in the direction shown by the arrow before removing the reel table. Take care not to touch the pad surface of the S-brake. (Fig. 1-3-34)

6. After cleaning the reel shaft with a cleaning kit, lubricate it with one or two drops of oil (lubrication kit).
7. When reinstalling the S-reel table assembly, temporarily move the S-brake assembly in the direction shown by the arrow, using a tweezers. (Fig. 1-3-34)

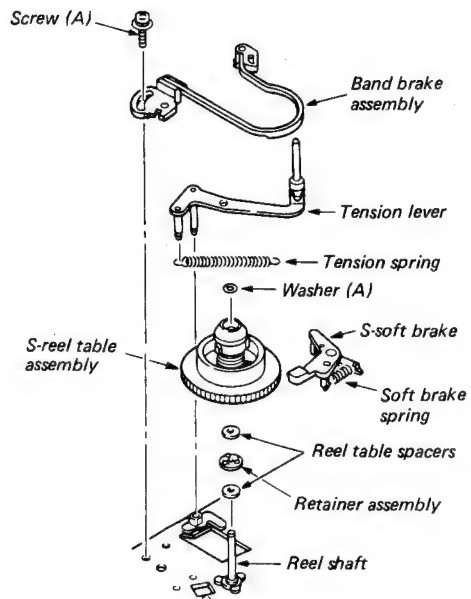


Fig. 1-3-33 Supply reel table assembly replacement

8. Replace the spacers and the retainer assembly on the reel shaft when mounting the reel table on the deck.
9. Mount the tension lever and band brake assembly.

Note:

The mold claw of the band brake can be engaged smoothly into the hole of tension lever by pushing it slightly. Take care not to deform the mold claw and the tension lever by forcing them.

10. Hook the tension spring onto the tension lever.

Note:

In this case, take care not to give permanent deformation to the spring.

11. Mount the S-soft brake.
12. Mount the soft brake spring.

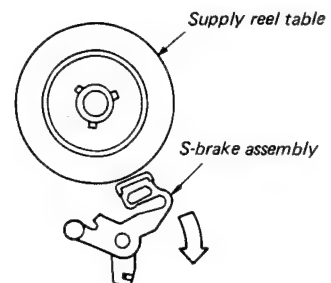


Fig. 1-3-34 S-brake assembly

(2) Take-up reel table assembly

1. Remove the reverse brake spring from the reverse brake assembly.
2. Remove the reverse brake assembly from the main base.
3. Remove the T-soft brake spring from T-soft brake assembly.
4. Remove the T-soft brake assembly from the main base.
5. Remove the washer (A), then move the T-brake assembly in the direction shown by the arrow before removing the T-reel table assembly. Take care not to touch the pad surface of T-brake assembly.
6. As the bearing is stained with oil, the reel table spacers and thrust washer may stick to the T-reel table assembly and be removed with it. Take care not to miss them.
7. Clean the reel shaft using a cleaning kit, and apply one or two drops of oil (lubrication kit) after the reel shaft has dried.
8. Replace the take-up reel with a new one.
9. When mounting the take-up reel table, move the T-brake assembly in the reverse direction shown by the arrow with tweezers.
10. Replace the spacers and the thrust washer on the reel shaft when the reel table mounts on the deck.

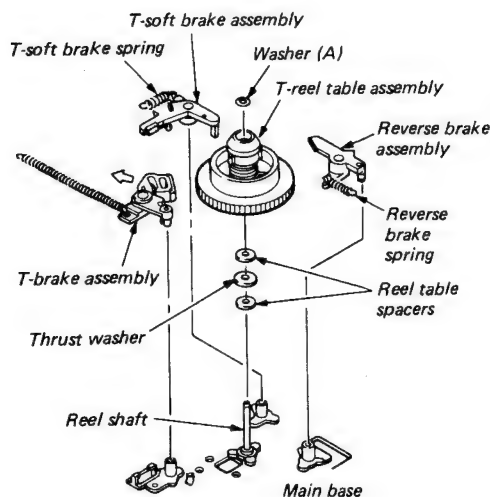


Fig. 1-3-35 Take-up reel table assembly replacement

1-3-12. Idler Assembly Replacement

Assume the front loading assembly is removed.

1. Removal of reel motor assembly (Fig. 1-3-36)
Turn over the set, and remove three screws (A) and screw (B). Disconnect the 3P connector of the reel motor from the T-sensor assembly. Move the idler assembly in the direction shown by the arrow, then lift the reel motor assembly upward to remove it.

After the reel motor was replaced, be sure to make adjustment of the reel torque referring to the item (2) in 1-4-3.

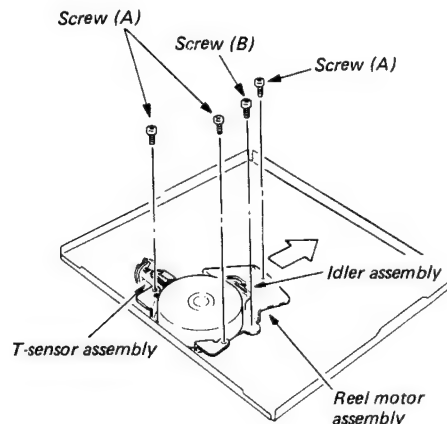


Fig. 1-3-36 Removal of reel motor assembly

Notes:

- * Before remounting, always clean knurling surface of the motor pulley, using the cleaning kit. This is to prevent oil, dust, etc. from sticking on surface of the idler rubber.
- * Screws (A) and (B) are different in length.

2. Removal of idle stop bracket. (Fig. 1-3-37).

Remove two screws (A), then remove the idle stop bracket.

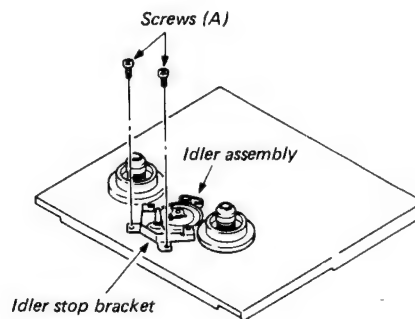


Fig. 1-3-37 Removal of idler stop bracket

3. Remove the T-reel table assembly as previously stated. (Refer to 1-3-11 (2)).
4. Remove the polyslider. (Fig. 1-3-38)
5. Remove the idle spring from the post.
6. Move the idler assembly in the direction as shown by the arrow. (Fig. 1-3-38).

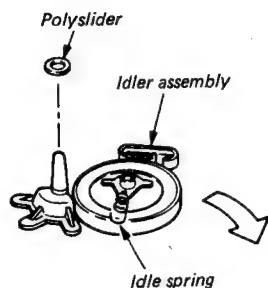


Fig. 1-3-38 Idler assembly replacement (1)

7. Confirm that the idler assembly is not caught with the main base. Lift the idler assembly upward.
8. When mounting, perform the previous steps in reverse order.
9. When mounting the idler assembly, be sure to grease. (Fig. 1-3-40)

Note:

Be sure to confirm that grease does not stain the rubber when the idler swings. Excessive amount of grease applied may stain the rubber.

10. Be sure to clean the idler rubber with the cleaning kit.

Note:

Make sure that the idler rubber is not stained with oil and dust. If stained, tape winding trouble may occur.

11. When assembling, perform the previous steps in reverse order. When the idler assembly was replaced, make sure to check reel torque adjustment referring to 1-4-3 (3).

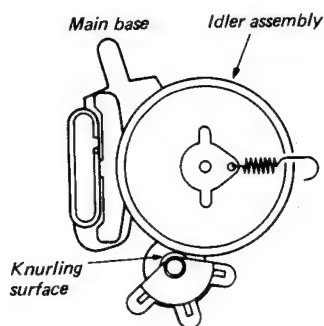


Fig. 1-3-39 Idler assembly replacement (2)

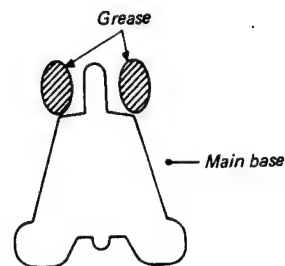


Fig. 1-3-40 Idler assembly replacement (3)

1-3-13. Capstan Motor Replacement

1. Remove the 6P connector from the capstan motor. (Fig. 1-3-41).
2. Remove the No. 9 guide lever assembly. (Refer to 1-3-3 (7))
3. Remove three screws and then the capstan motor. (Fig. 1-3-42)
4. Replace the capstan motor with a new one and mount it using the previous steps in reverse order.

Note:

After the capstan motor is replaced, check the tape transport system, referring to 1-4-4.

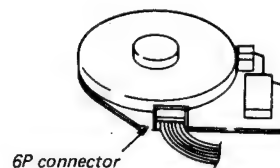


Fig. 1-3-41 Capstan motor replacement (1)

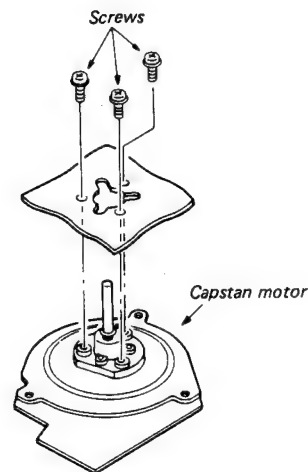


Fig. 1-3-42 Capstan motor replacement (2)

1-4. Check and Adjustment

1-4-1. Timing Check

(1) Cam gear and phase gear

1. Make sure the C-hole on the main base lines up with the holes on the cam gear and the loading drive base, if not, rotate the gear pulley assembly of the loading drive fully in the direction shown by the arrow to set FF mode. (Fig. 1-3-27)
2. Confirm the arrow mark of the phase gear is also aligned with the V-slot. If not aligned, adjust the timing by remounting the phase gear.

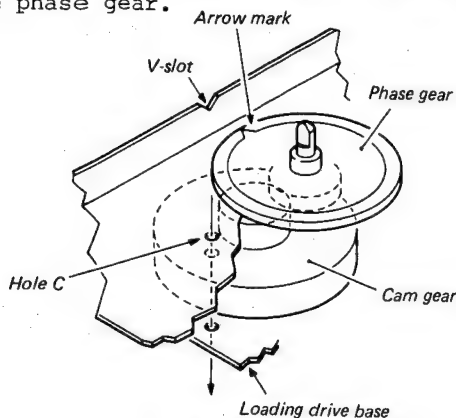


Fig. 1-4-1 Cam gear/phase gear

(2) Loading ring and loading drive gear

1. Make sure through the main base hole that holes of the S-loading ring and the T-loading ring are overlapped as shown by the arrow A. If they are not overlapped, adjust the location by removing the loading ring gear B.
2. Also make sure that the B-hole on the S-loading ring is coincided with the delta mark on the loading drive gear under the condition in the step 1 above. If they are not coincided, adjust the timing (location) by remounting the loading drive gear.

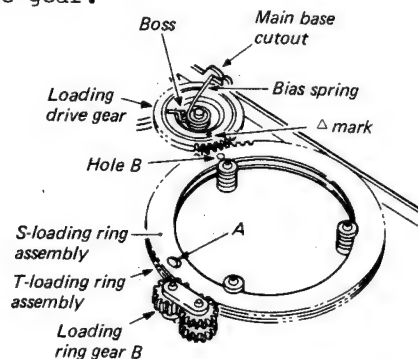


Fig. 1-4-2 Loading ring assembly/ loading drive gear

(When remounting the loading drive gear, make sure one end of the bias spring is hooked on the main base cutout and the other end is hooked on the boss of the loading drive gear.)

1-4-2. Check and Adjustment of Tension Pole Position

1. Set the deck to play mode with the front loading assembly removed.
2. Make sure the center of the tension pole is in alignment with the left edge of No. 1 guide post ($\pm 1\text{mm}$) as illustrated.
3. If necessary, loosen the screw (A) and adjust the mounting position of the band bracket.

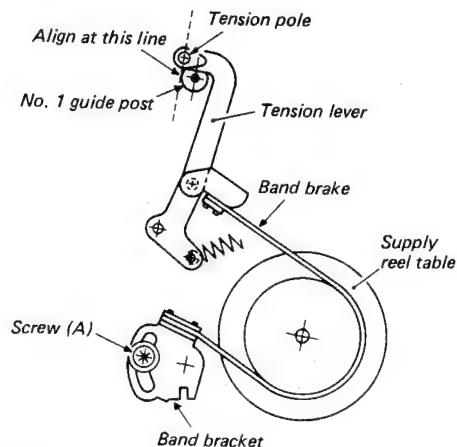


Fig. 1-4-3 Tension pole position

1-4-3. Reel Torque

(1) Reel torque

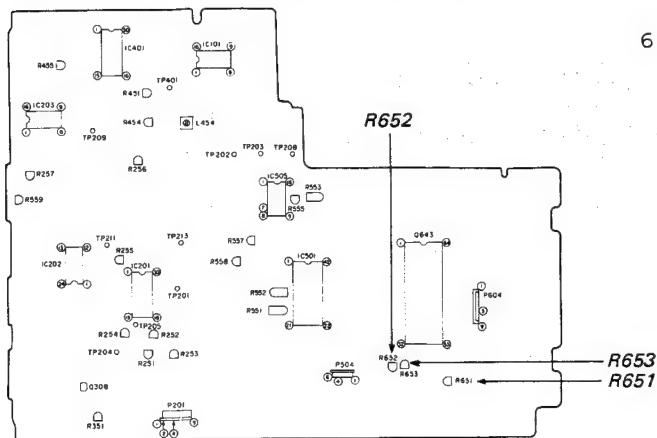
1. When REVIEW mode
Excessive torque will cause damage to the tape during REVIEW mode, while poor torque may not wind the tape.
2. Record/Playback (take-up side) mode
Too little torque does not rewind the tape to the end. If too large the tape may be stretched by excessive tension.
3. FF mode (take-up side)
REW mode (supply side)
Too little torque does not rewind the tape to the end or takes too much time for rewinding.
4. Inspection
Rewind the torque cassette to the end, then check the torque values shown below.
Record/Playback 70 - 90g-cm
FF/REW over 600g-cm
Reverse 190 \pm 10g-cm
Reverse 140 \pm 10g-cm

Notes:

- * If the reel torques are out of limits, clean the rubber surface of the idler assembly, the reel motor pulley, the reel table assembly, etc.
- * Replace the idler assembly, if its rubber is hardened or worn out.
- * Replace the brake pad of the main brake, if it is worn out.
- * If the specified torque value is not obtained, replace the reel idler assembly.

(2) Reel torque adjustment

1. First, record a TV broadcast program on the entire torque cassette tape (KT-300NR) in the EP mode.
2. Load a torque cassette in the VCR and rewind the tape before proceeding with measurement.
3. Set the VCR to the REVIEW mode and adjust R651 until the REVIEW take-up torque of 190 ± 5 g-cm is obtained while observing the left torque meter.
4. After completion of step 3, set the VCR to the PLAY mode.
In this case, push the STILL/PAUSE button as soon as the play mode has been set. Wait several seconds and then set the VCR to the PLAY mode again.
Read the right torque meter and adjust R652 so that the PLAY take-up torque of 80 ± 10 g-cm is obtained.
5. After completion of step 4, set the VCR to the REVERSE mode and perform the reverse torque adjustment.
Adjust R653 so that the right torque meter shows 140 ± 10 g-cm.
6. When the reel motor assembly or the idler assembly is replaced, perform confirmation and adjustment of the reel torque. Perform the reel torque adjustment in the order of item 3, 4 and 5.
Torque value will change if the confirmation is performed in the reverse order. If the torque(s) is out of limit in the above checks, adjust R651 again.
7. Confirmation and adjustment of the back tension will be performed with the front loading mechanism removed from the set and terminals 1 and 6 of P604 (Main P.C. Board) short-circuited, using a back tension cassette gauge.
First, make sure that the tension pole is positioned correctly by referring to (item 1-4-2).
Load a back tension cassette and set the VCR to the PLAY (SP) mode.
Make sure the meter is indicating 16 - 26 gf.cm.
If the value is out of limit, first make sure the tension level spring is normal, and then replace the band brake assembly as required. (Refer to item 1-3-6).



Main P.C. Board

PRECAUTIONS FOR USE OF TORQUE CASSETTE (KT-300NR)

1. Before loading a torque cassette in a VCR, always remove tape slack. The tape slack can be removed by rotating the reel to its take-up direction. (The tape tends to slack when there is no reel brake actions.)
2. When the torque cassette is slotted in, confirm followings:
 - a. Make sure the tape does not ride up or over the No. 8 cap. If it does, do not eject the tape but bring the tape to its correct position, taking care not to damage the tape.
 - b. Make sure the tape is not slackened, if slackened, operate the VCR in FF or REW mode and then stop the tape. Then make sure the tape is not slackened again.
 - c. After above confirmation, proceed to the reel torque adjustments and confirmation.
3. Cautions for removal of torque cassette
 - a. When removing the torque cassette from the VCR, set the VCR to the STOP mode and wait for several seconds. Then, make sure the tape is not slackened. Push the EJECT button to remove the cassette.
 - b. When removing the torque cassette from the VCR, also make sure the tape is not slackened inside the cassette lid before pulling the cassette from the VCR. If the tape is slackened inside the lid, carefully bring the tape in place and then pull the cassette.
4. Cautions for playback operation
 - a. When making adjustments and confirmation in the PLAY (EP) mode, first push the PLAY key, and then push STILL/PAUSE key to set the STILL mode. Run the VCR for several seconds in the STILL mode. Release the STILL mode and set the PLAY mode. Then perform the reel torque adjustment and confirm all functions work properly.
5. If the previous precautions 1, 2, 3 and 4 are not performed properly, the tape may be damaged and correct measurement can not be performed.
6. Do not use worn out or damaged tape, if used they may damage video heads on the cylinder. In such a case always replace the tape with new one. The replacement tape is of T-120 type, $6.01m \pm 0.3m$ in length.

1-4-4. Tape Transport System

The tape transport system has been precisely adjusted in the factory, so no check and alignment are necessary except the followings:

- * Noises observed on the screen
- * Tape damage
- * Parts, shown in the adjustment procedures for the tape transport system, item 1-3-3, were replaced.

<Adjustment reference>

Lower flange height of No. 8 guide is used as the basic reference for the transport adjustment, so do not move the No. 8 guide except replacing the No. 8 guide sleeve.

(1) Location of tape transport adjustment

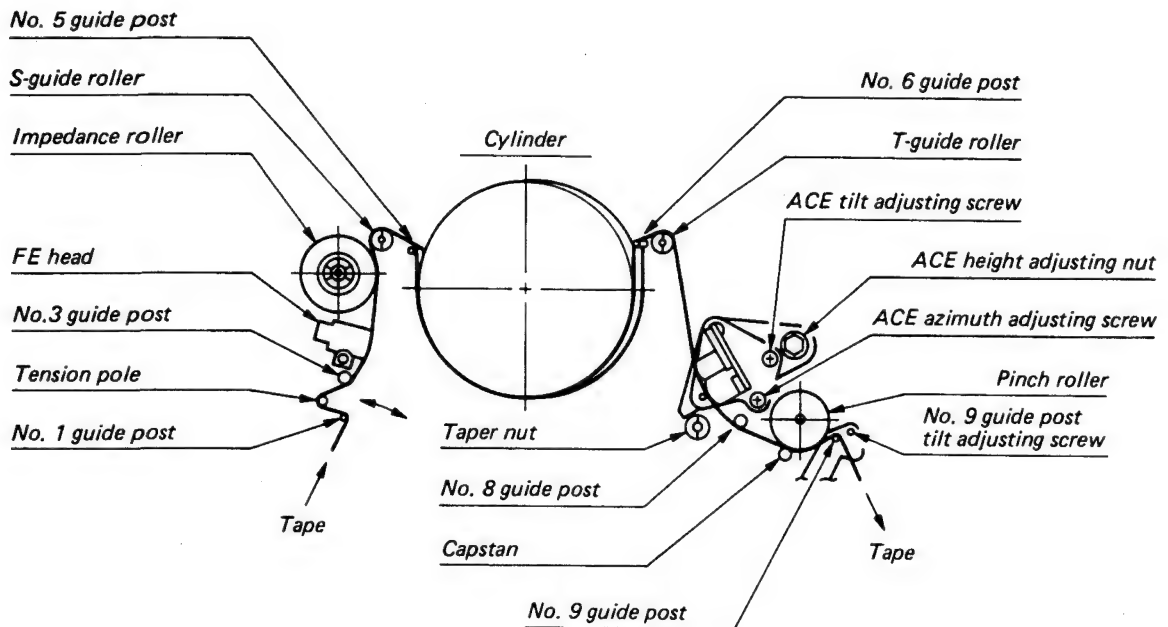


Fig. 1-4-4 Location of tape transport adjustment

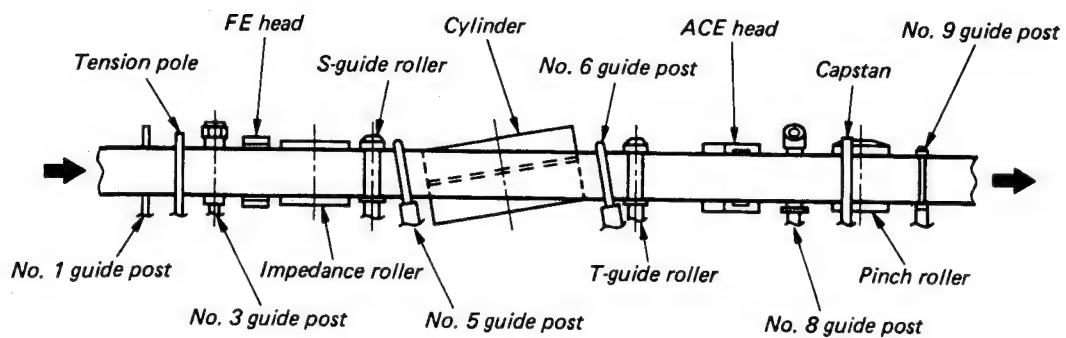
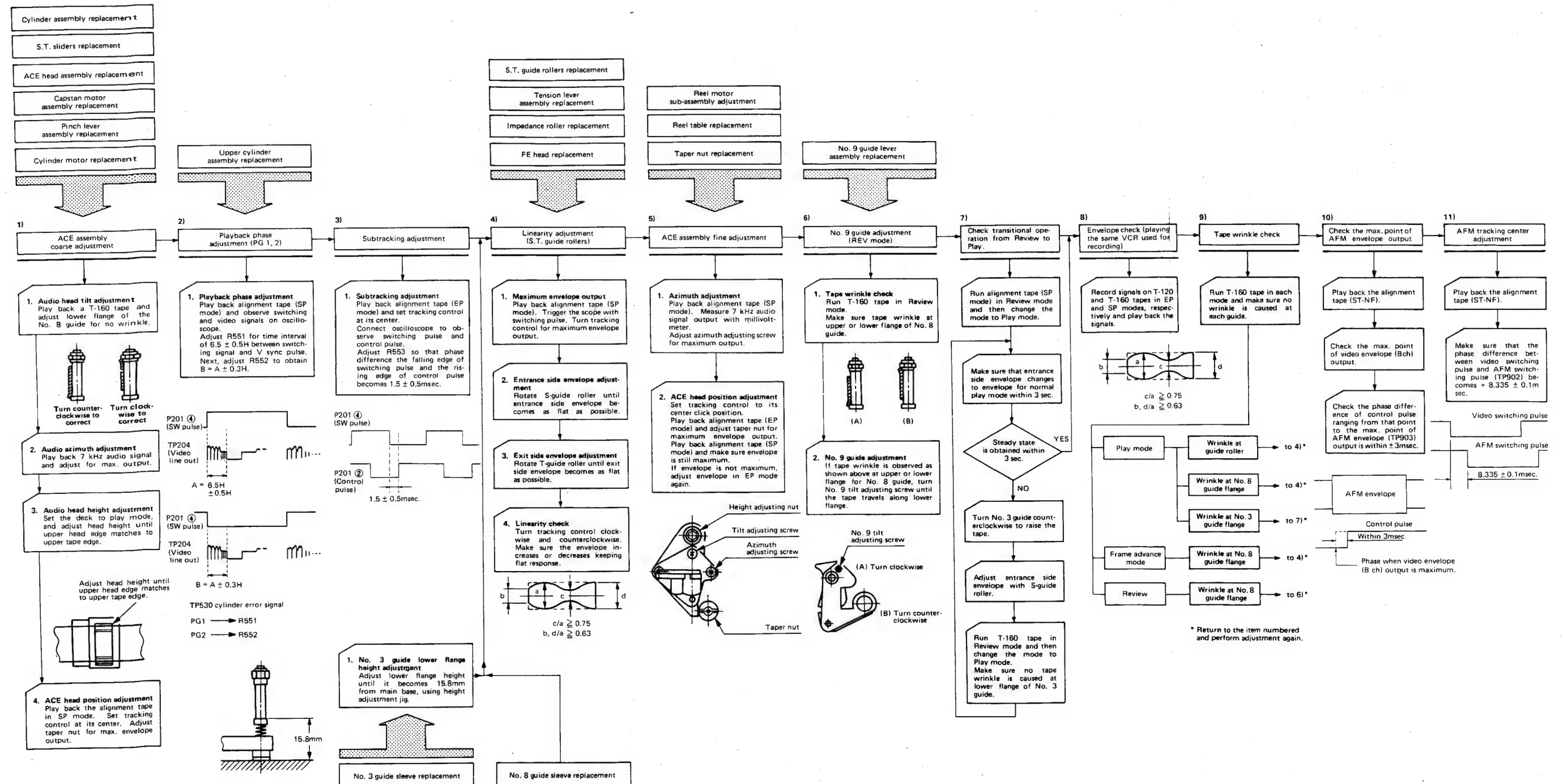


Fig. 1-4-5 Tape travel diagram

(2) Tape transport system adjustment flow chart.



(3) Tape transport system adjustment

* Pre-adjustment

When the part(s) listed in Table 1-4-1 was replaced, perform required adjustments by referring to procedures for the tape transport system.

When the part(s) listed in Table 1-4-1 was replaced, the tape path may be changed and may damage alignment tape. To prevent this, first run a T-160 tape and make sure excessive tape wrinkle does not occur at each tape guide.

1. If tape wrinkle is observed at the No. 3 guide, make sure of the preset height of the guide again.
2. If tape wrinkle is observed at the S, T-guide rollers, turn the S, T-guide rollers for no wrinkle.

Table 1-4-1

Part replacement	Adjustment procedure
<ul style="list-style-type: none"> * Cylinder complete assembly * S, T sliders * ACE head assembly * Capstan motor assembly * Pinch lever assembly * Cylinder motor 	From item 1)
* Upper cylinder	From item 2)
<ul style="list-style-type: none"> * S, T guide rollers * Tension lever assembly * Impedance roller * FE head * No. 3 guide sleeve 	From item 4)
<ul style="list-style-type: none"> * Reel motor sub-assembly * Reel table (S, T) * Taper nut 	From item 5)
* No. 9 guide lever	From item 6)

* Adjustment procedures

1) ACE head assembly adjustment

a. ACE tilt adjustment

1. Play back a T-160 tape and observe running condition of the tape at the lower flange of No. 8 guide.

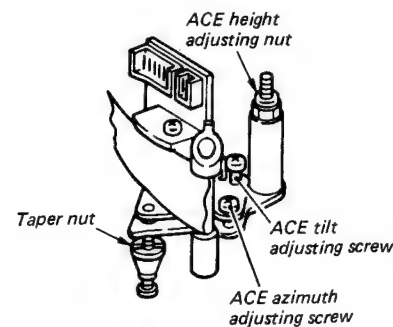


Fig. 1-4-6 ACE head assembly

2. Adjust the ACE tilt adjusting screw until tape wrinkle is caused at the lower flange of No. 8 guide as shown in Fig. 1-4-7(a).
3. Turn the ACE tilt adjusting screw counterclockwise until the tape travels along the lower flange as shown in Fig. 1-4-7(b).

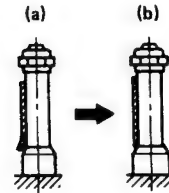


Fig. 1-4-7 No. 8 guide check

b. Audio azimuth adjustment

1. Play back the alignment tape (SP mode; ST-N1), 7 kHz portion of audio signals.
2. Connect a millivoltmeter to the audio line output terminal.
3. Turn the ACE azimuth adjusting screw to obtain maximum audio output.

c. Audio head height adjustment

1. Run the alignment tape (ST-N1) in the playback mode.
2. Observe surface of the audio head using a dental mirror.
3. White ceramic is provided on both sides of the audio and control heads of the ACE head assembly. Turn the ACE height adjusting nut so that lower tape edge matches to the upper edge of the ceramic on the lower head. If the previous method is deficient, play back the 1 kHz portion of the alignment tape (ST-N1) and adjust for maximum audio output.

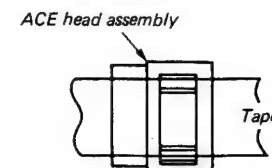


Fig. 1-4-8 Head height

d. ACE head position pre-adjustment

Note:

Before proceeding with this adjustment, remove adhesive cement applied on the taper nut.

1. Play back the alignment tape(ST-N1).
2. Adjust the taper nut for maximum video envelope output after the tracking control set at its center position.

2) Playback phase adjustment (PG1, PG2 adjustment)

1. Play back the alignment tape in the SP mode (ST-N1).
2. Observe a video signal on an oscilloscope display triggered with the switching pulse.
3. Adjust R551 for time interval of $6.5 \pm 0.5H$ (= A) between video switching signal and V sync pulse. (Fig. 1-4-9 (a))
4. Next, adjust R552 until time interval of $A \pm 0.3H$ is obtained between falling edge of SW pulse and V sync pulse. (Fig. 1-4-9 (b))

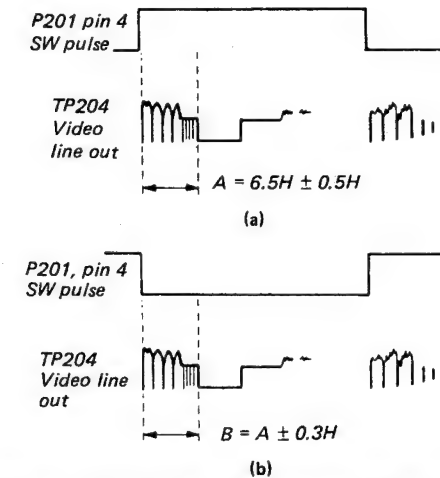


Fig. 1-4-9 Playback phase adjustment

3) Subtracking adjustment

1. Play back the alignment tape in SP mode (ST-N1).
2. Adjust R553 so that phase difference of $1.5 \pm 0.5\text{msec}$ is obtained between the rising edge of the video switching pulse and the rising edge of the control pulse. (Fig. 1-4-10)

Note:

In this case, adjust the tracking control at the click position.

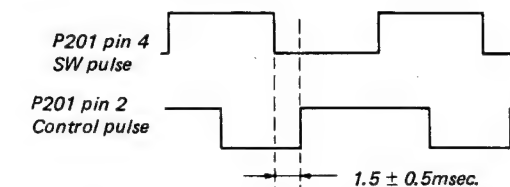


Fig. 1-4-10 Subtracking adjustment

4) Linearity adjustment (S, T-guide rollers adjustment)

1. Play back a 30% white (EP mode) signal on the alignment tape (ST-N1).
2. Observe the signal video envelope on an oscilloscope display triggered by the video switching pulse.
3. Make sure the video envelope waveform (in its maximum output) meets the specification shown in Fig. 1-4-11. If not, adjust as follows:

Note:

a = maximum output of the video envelope
b = minimum output of the video envelope at the entrance side
c = minimum output of the video envelope at the center point
d = minimum output of the video envelope at the exit side

4. In the same way check the envelope in the SP mode.

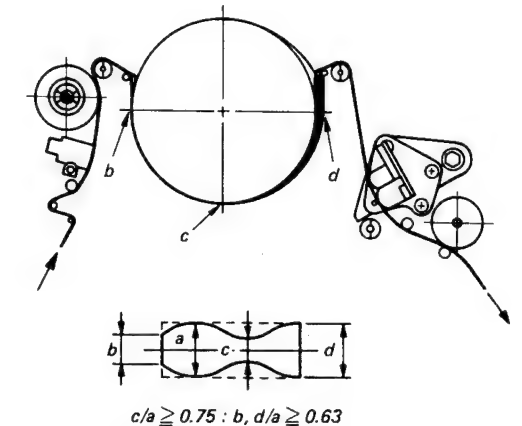


Fig. 1-4-11 Envelope waveform adjustment

5. If the A section in Fig. 1-4-12 does not meet the specification, adjust the S-guide roller in up or down direction.
6. If the B section in Fig. 1-4-12 does not meet the specification, adjust T-guide roller in up or down direction.

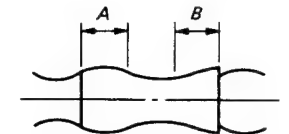


Fig. 1-4-12 Adjustment points

7. After completion of the adjustment(s), turn the tracking control and make sure video envelope variations are almost flat.
8. If the envelope varies as shown in Fig. 1-4-13, adjustment of the S, T-guide rollers may be upset, and perform the adjustment again.

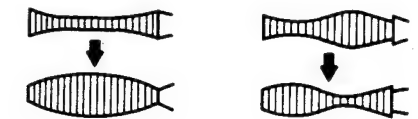


Fig. 1-4-13 Abnormal variation of the waveform

5) ACE head assembly fine adjustment

a. Tape wrinkle check at the lower flange of No. 8 guide

1. If tape wrinkle is observed at the lower flange of No. 8 guide, adjust the ACE tilt adjusting screw counterclockwise as shown in Fig. 1-4-6 until the wrinkle disappears.
2. If a gap is observed between the lower flange of No. 8 guide and the lower edge of tape, adjust the ACE tilt adjusting screw clockwise until the tape travels along the lower flange.

Note:

This adjustment should be made using a beginning part of T-160 tape.

b. Azimuth adjustment

1. Play back the 7 kHz audio signal on the alignment tape (ST-N1).
2. Adjust the ACE azimuth adjusting screw for maximum audio output as shown in Fig. 1-4-6.

c. ACE head position adjustment

1. Play back the 30% white signal on the alignment tape (ST-N1).
2. Place the tracking control at its center click position.
3. Trigger an oscilloscope with the video switching pulse and observe the video envelope waveform.
4. Turn the taper nut counterclockwise until the ACE base reaches the lower taper end of the taper nut as shown in Fig. 1-4-14.

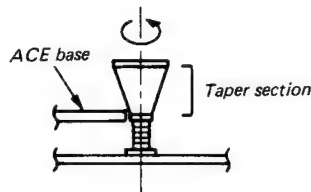


Fig. 1-4-14 Taper nut and ACE base

5. Turn the taper nut slowly counterclockwise and fix the taper nut at the position where the video envelope reaches a first peak level.
6. Play back the 2 MHz video signal on the alignment tape (ST-N1).
7. Make sure the video envelope is maximum with the tracking control set to the center click position.

Note:

- * If no video envelope is observed with the tracking control set to the center position, perform the video envelope adjustment to obtain maximum video envelope in both SP and EP modes, again.
- * If maximum video envelope deviates within $\pm 6\text{msec}$ from the tracking volume center, perform a fine adjustment with ST-N1 to output maximum video envelope. Play back ST-N1, and check the video envelope waveform is maximum with the tracking control set to the center position.

(Deviation of the maximum point should be within $\pm 2\text{msec}$.)

8. Play back the 2 MHz video signal on the alignment tape (ST-N1) and make sure the audio output is maximum.

Note:

- * After completion of the ACE head position adjustment, the ACE base must be positioned at approximately the center of the taper nut as shown in Fig. 1-4-15.

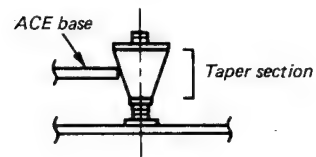


Fig. 1-4-15 Position of taper nut after adjustment

6) No. 9 guide lever adjustment

1. Set T-160 to the Cue mode. Switch the Cue mode to the Review mode when the tape has been rewound into the T-reel table to some extent.
2. Check tape wrinkle at the upper and lower flange of No. 8 guide. If no tape wrinkle is observed along the lower flange, no adjustment is required.
3. If the tape runs along the upper flange or tape wrinkle occurs, turn the No. 9 tilting screw in Fig. 1-4-16 counterclockwise and adjust the screw until the tape runs along the lower flange.
4. If tape wrinkle occurs at the lower flange, turn the No. 9 tilting screw in Fig. 1-4-16 clockwise for no tape wrinkle.

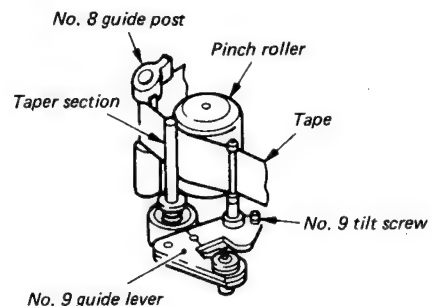


Fig. 1-4-16 No. 9 guide lever adjustment

7) Check for transitional operation from Review to Play

1. Play back the alignment tape (ST-N1) in Review mode and observe the video envelope with an oscilloscope.
2. Switch the Review mode to the Play mode. When switched to the Play mode, make sure the entrance side envelope comes to an approximate steady state within 3 seconds as shown in Fig. 1-4-17.

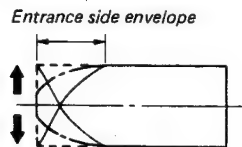


Fig. 1-4-17 Video envelope rising when operation mode is switch from review to play mode

If it does not rise within 3 seconds, adjust as follows:

3. Turn the No. 3 guide nut counterclockwise to adjust the lower flange height as shown in Fig. 1-3-21. Make sure the tape travels along the lower flange.
4. Play back an alignment tape (2 MHz video signal). Since entrance side linearity varies as the height of No. 3 guide varies, adjust the S-guide roller to correct the linearity.
5. Change operation mode from the Review to the Play mode again and make sure the entrance side envelope rises within 3 seconds. If not, perform the adjustment again from item 3.
6. Play back the T-160 tape in the Play mode and make sure no tape wrinkle occurs at the lower flange of the No. 3 guide. If the tape is raised too high at the No. 3 guide, the tape will be damaged. So if tape wrinkle occurs, turn the No. 3 guide nut clockwise until the wrinkle disappears and then perform adjustment from item 4.

Note:

If the rising characteristic is poor in Review mode, screen noises may occur in synchronous editing recording. Perform the adjustment carefully.

8) Envelope check

1. Make recordings on T-120 and T-160 tapes in both SP and EP modes, and make sure the playback output envelope meets the specification shown in Fig. 1-4-11.
2. In playback using the same video deck as used for the recording, (with a T-120) the video envelope should meet the specification shown in Fig. 1-4-18.
3. If the performance does not meet both specifications 1 and 2 above, replace the upper cylinder assembly.

4. Set the deck to EP mode with a T-120 tape wound at its beginning position and confirm operation of the synchronous editing.
5. If picture noises are observed at the starting position of the editing, adjust the preset height of the No. 3 guide again.

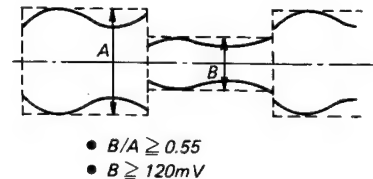


Fig. 1-4-18 Envelope output and output level difference

9) Tape wrinkle check

1. Play back the T-160 tape in the playback, Cue, Review and the frame feeding mode, and observe tape wrinkle at each guide.
2. If excessive tape wrinkle is observed at the mode shown below, perform the associated adjustments also shown below.
 - a. Playback mode
 - Tape wrinkle at the S, T-guide roller section
 - Item 4: Linearity adjustment
 - Tape wrinkle at No. 8 guide flange
 - Item 4: Linearity adjustment
 - Tape wrinkle at No. 3 guide flange
 - Item 7: Rising characteristic check in mode change from Review to Play mode.
 - b. Cue/Review mode
 - Tape wrinkle at No. 8 guide
 - Item 6: No. 9 guide lever adjustment
 - c. Frame feeding mode
 - Tape wrinkle at No. 8 guide
 - Item 4: Linearity adjustment

10) Maximum AFM envelope check (Fig. 1-4-19)

1. Play back ST-NF (3 MHz, AFM standard signal) tape.
2. Trigger with switching pulse. Adjust the tracking volume control, and check the phase of control pulse at the maximum video envelope output (Bch).
3. Check phase between the maximum point and the maximum AFM envelope is within $\pm 3msec$. At that time, also check each channel A and B of AFM envelope is within $\pm 3msec$.

Note:

When the phase difference exceeds 3 msec, replace the upper cylinder.

- * AFM envelope terminal
- TP903 on Hi-Fi audio P.C. board

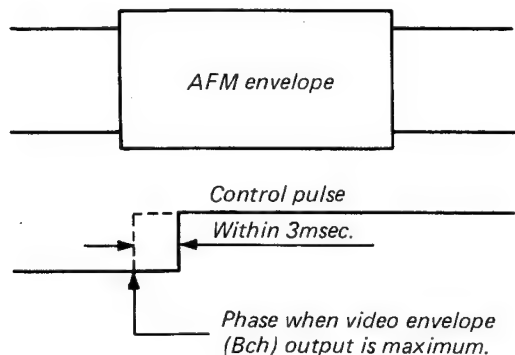


Fig. 1-4-19 Control pulse phase at the maximum AFM envelope output

11) AFM tracking center adjustment (Fig. 1-4-20)

1. Play back ST-NF (color bar, AFM 400 Hz standard signal) tape.
2. Make sure that the phase difference between the video switching pulse and AFM switching pulse is $8.335 \pm 0.1\text{msec.}$

- * AFM switching pulse terminal
- TP902

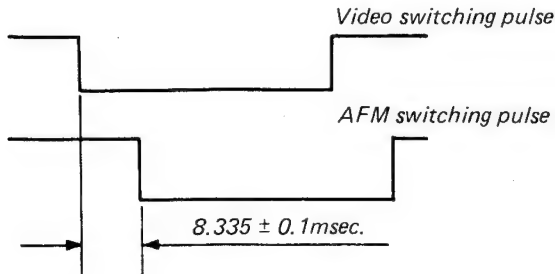


Fig. 1-4-20 Phases of video and AFM switching pulse

2. ELECTRICAL ADJUSTMENT

<Test equipments required>

Adjustment will be performed with the following test equipments.

1. Color TV (Monitor)
2. Oscilloscope, 2 CHs, 15 MHz or higher with delay system
3. Frequency counter (7 digits or higher)
4. Millivoltmeter
5. Digital voltmeter
6. Tester (20K ohm/V)
7. Audio generator
8. Audio attenuator
9. Alignment tapes
Part code: ST-N1: 70909202
ST-NF: 70909203
10. Alignment screw driver (jig)
11. Color pattern generator
12. Video sweep generator

<Color bar signal>

Color bar signals of 75% recorded on the alignment tapes are shown in Fig. 2-1-1.

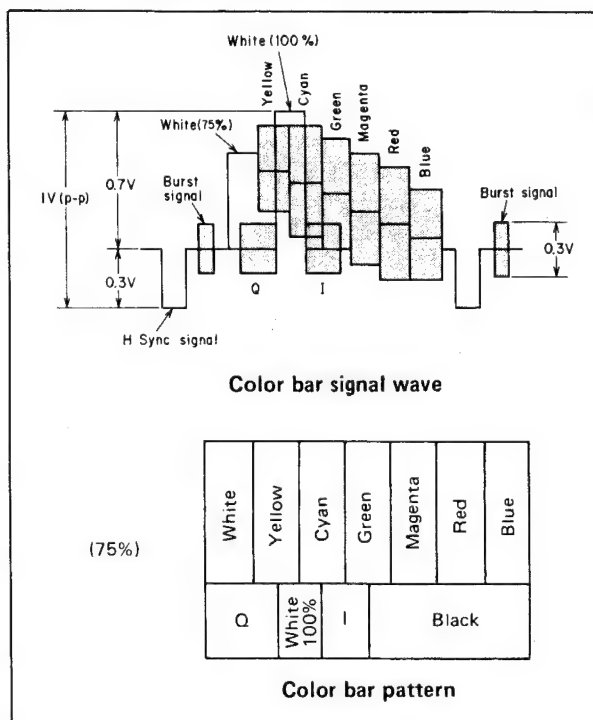


Fig. 2-1-1

<Specified input and output levels, and impedance>

Video input: Negative sync, standard composite video signal 1Vp-p, 75 ohm
Video output: Same as the video input. 1Vp-p, 75 ohm
Audio input: -8 dBs, 47k ohm
Audio output: -6 dBs, 10k ohm

<Alignment sequence>

Proceed the alignments in the sequence as shown in Fig. 2-1-2.

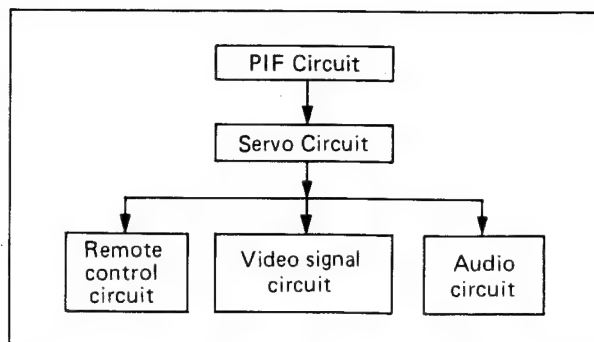
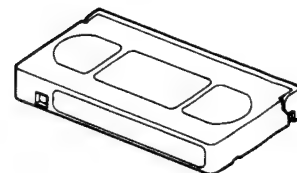


Fig. 2-1-2

Alignment tape specifications



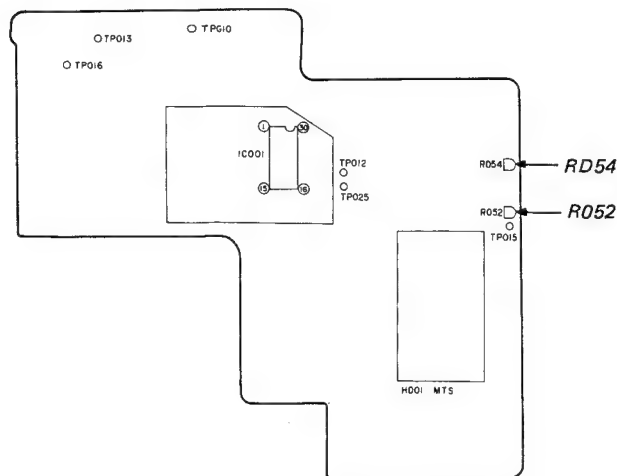
[1] ST-N1

Item No.	Video signal	Audio signal	Contents	Record	
				Mode	Time
1-1	Color bar	1 kHz	<ul style="list-style-type: none"> • Check and adjustment of Servo circuit. • Check and adjustment of Video circuit. • Check and adjustment of Audio circuit. 	SP	10 min.
1-2	Retma Pattern	3 kHz	<ul style="list-style-type: none"> • Check and adjustment of Servo circuit. 	SP	10 min.
1-3	2 MHz (recorded on CH-A only)	Record each 400 Hz & 7 kHz for 1 min. 30 sec. in 3 cycles.	Notes: 1. This signal is used for tape running adjustment. 2. Set tracking volume (VR) to center click position except linearity adjustment. 3. When making linearity adjustment (S, T guide roller), set tracking VR to the position where envelope obtains max.	SP	9 min.
1-4	Color bar	3 kHz	<ul style="list-style-type: none"> • Check and adjustment of Servo circuit. • Check and adjustment of Video circuit. 	EP	5 min.
1-5	30% White	No signal	<ul style="list-style-type: none"> • Check and adjustment of Servo circuit. Notes: 1. This signal is used for tape running adjustment also. 2. Set tracking VR to center. When making linearity adjustment, set tracking VR to the position where envelope obtains max.	EP	5 min.

[2] ST-NF (Hi-Fi Audio (AFM) adjustment)

Item No.	Video signal	Hi-Fi audio signal (re-recorded on video track)	Contents	Record	
				Mode	Time
2-1	3 MHz (recorded on CH-A only)	AFM 400 Hz	Notes: This signal is used for tape running adjustment. Set tracking VR to center click position.	SP	5 min.
2-2	Color bar	AFM 400 Hz	<ul style="list-style-type: none"> • Check and adjustment of Hi-Fi audio circuit (Set tracking VR to the position when audio FM output level obtains max.) Note: This signal is used for tape running adjustment also. Set tracking VR to center click position.	SP	5 min.
2-3	Color bar	Carrier 1.3 MHz(Lch) 1.7 MHz(Rch)		SP	5 min.

2-1. PIF, RF Channel Selection Circuit



PIF P.C. Board

2-1-1. AGC delay

1. Receive a broadcasting signal through the VCR and monitor the picture.
2. Adjust R052 for minimum snow and beat noises on the screen.

2-1-2. Separation (decoder)

1. Connect a stereo headphones to the headphone terminals.
2. Receive a stereo broadcasting program and monitor the program with the headphone. (EE MODE)
3. Adjust RD54 for the best stereo separation.

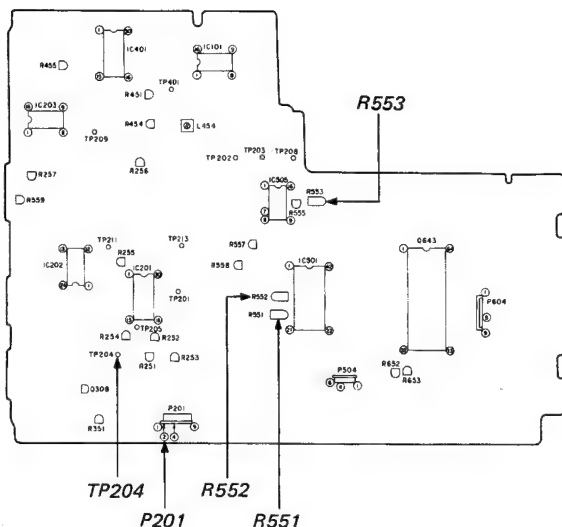
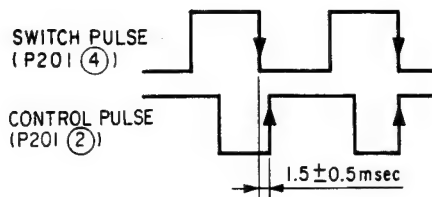
2-2. Servo Circuit

<Preparation>

1. Set the tracking control knob at the center click position.
2. Set the oscilloscope to the chop mode.

2-2-1. Subtracking

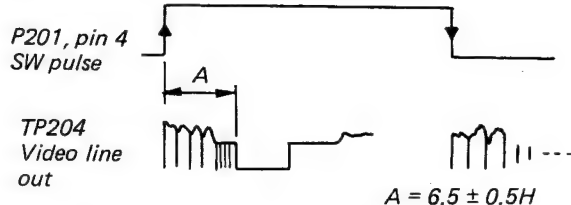
1. Set the tracking control knob at click position.
2. Connect the oscilloscope to pins 4 and 2 of P201 and set the scope to chop mode.
3. Adjust R553 until phase difference of $1.5 \pm 0.5\text{msec}$ is obtained between falling edge of the SW pulse and rising edge of the control pulse.



Main P.C. Board

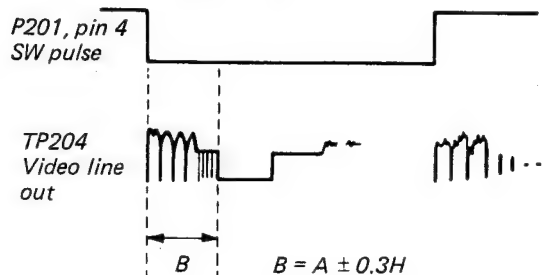
2-2-2. Playback phase (PG1)

1. Connect the oscilloscope to TP204 (Video line output) and pin 4 of P506.
2. Play back the alignment tape (ST-N1, SP mode) with the tracking control knob at its center click position.
3. Adjust R551 until interval (A) of $6.5 \pm 0.5H$ is obtained between a rising edge of the SW pulse and the front porch of the V sync pulse.



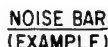
2-2-3. Playback phase (PG2)

1. Play back the alignment tape (ST-N1, SP mode).
2. Set the oscilloscope to the chop mode, and connect the scope to pin 4 of P201 (SW pulse) and TP204 (Video line output).
3. Adjust R552 until interval (B) of $A \pm 0.3H$ is obtained between a falling edge of the SW pulse and the front porch of the V sync pulse.



1. Play back a tape (recorded in the EP mode) at double speed mode.
2. Adjust R558 until noise bars disappear on the monitor screen.

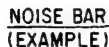
This adjustment should be made after completion of the subtracking adjustment.



1. Connect the oscilloscope to pin 9 of IC505.
2. Play back a tape (recorded in the SP mode) in the slow mode.
3. Adjust R555 until the low level period of the waveform shows $66.7 \pm 2\text{msec}$, triggering the scope at falling edge of the output at pin 9 of IC505.
4. Make sure no noise appears on the monitor screen.



1. Play back a tape (recorded in the EP mode by the VCR under test) in the reverse slow mode.
2. Adjust R557 so that noises disappear on the screen.
3. Makes sure noises do not appear on the screen in the forward slow mode.
4. Observe waveform at pin 7 of IC505 and make sure the low level period does not exceed 120msec.



1. Play back a tape (recorded in the SP mode by the VCR under test) in the still mode.
2. Adjust R559 for minimum jitter on the monitor screen.



Unless otherwise specified, following setting conditions will be used in the adjustments which follows:

- ```
* External input Color bar signal
* Tape speed selector . . SP mode
* Input select switch . . LINE
* Picture select
 switch HP
* TV still button OFF
* OSP button OFF
* Picture control Center click
 position
* Tracking control Center click
 position
* TV/VCR switch VCR position
* PCM switch OFF
```

1. Connect the oscilloscope to TP204 and trigger the scope with the composite sync signal at TP213.  
Adjust the scope so that it can display a waveform of approx. 2H.  
Set the VCR to the EE mode.
2. Adjust R255 to obtain  $2.0 \pm 0.2V_{p-p}$  between the sync tip and 100% white level.



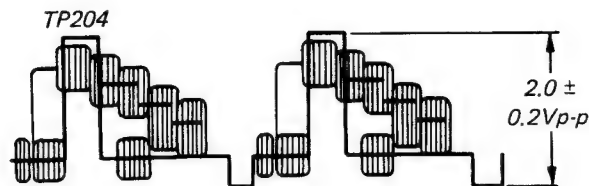
### 2-3-2. Y signal and color signal separation

1. Connect the oscilloscope to TP204 and trigger the scope with the composite sync signal at TP213. Adjust the scope so that it can display a waveform of approx. 2H.
2. Adjust R454 and L454 to minimize color signal components in this order.



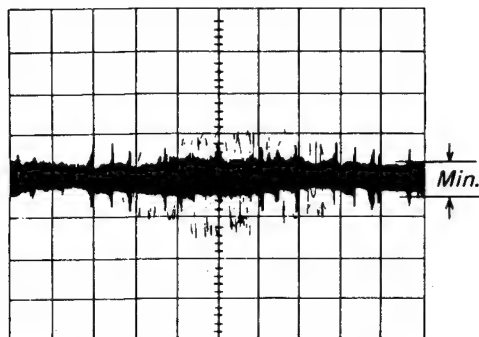
### 2-3-3. Playback Y signal level

1. Play back the alignment tape (ST-N1) in the SP mode.
2. Connect the oscilloscope to TP204 and, trigger the scope with the composite sync signal at TP213. Adjust the scope so that it can display a waveform of approx. 2H.
3. Adjust R256 to obtain  $2.0 \pm 0.2V_{p-p}$  between the sync tip and 100% white level.

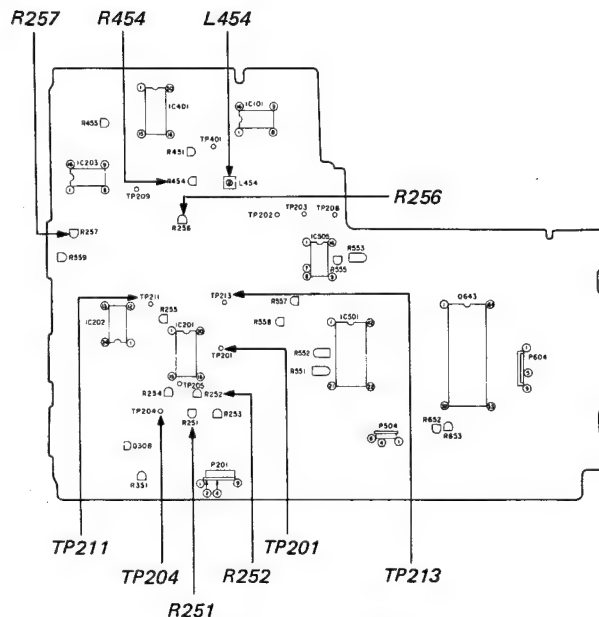


### 2-3-4. Y comb filter balance

1. Playback the alignment tape (ST-N1) in the SP mode.
2. Connect the oscilloscope to TP211 and trigger the scope with the composite sync signal at TP213. Adjust the scope so that it can display a waveform of approx. 2H.
3. Adjust R257 for minimum amplitude of the signal on the scope display.



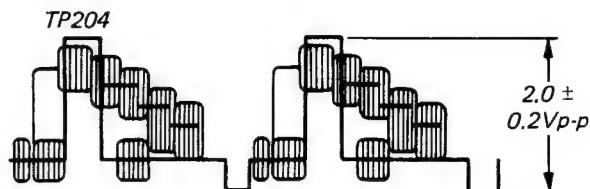
Horizontal axis:  $10\mu s/div.$   
Vertical axis:  $0.5V/div.$



Main P.C. Board

### 2-3-5. FM deviation

1. This adjustment should be made after completion of the playback Y signal level adjustment.
2. Connect the oscilloscope to TP204 and trigger the scope with the composite sync signal at TP213. Adjust the scope so that it can display a waveform of approx. 2H.
3. Make a recording for 2 - 3 minutes in the SP mode by the VCR under test, and then play back the tape in the SP mode.
4. Adjust R252 until voltage shows  $2.0 \pm 0.2V$  while repeating the step 3 above.
5. Always proceed to the sync tip frequency adjustment after the FM deviation adjustment.



### 2-3-6. Sync tip frequency

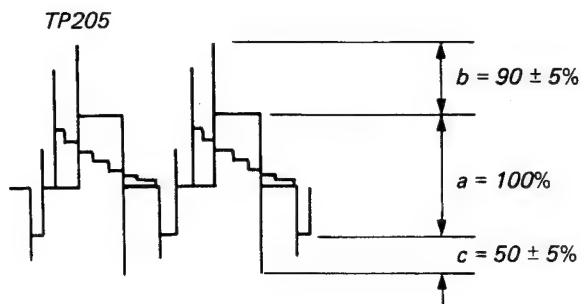
1. Short-circuit LINE input terminal. Do not feed any signal to the terminal.
2. Set the VCR to the record mode.
3. Connect a frequency counter to TP201 and adjust R251 to obtain frequency reading of  $3.40 MHz \pm 0.1 MHz$ .

#### Note:

R252 should not be rotated after completion of this adjustment.

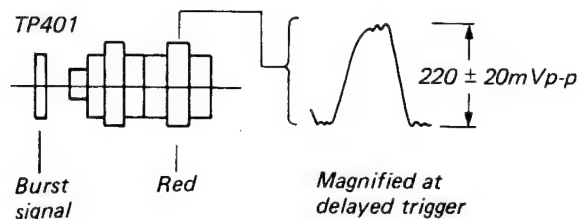


1. Feed the color bar signal to the line input terminal.
2. Set the VCR to the EE mode. (EP Mode)
3. Connect the oscilloscope to TP205 and trigger the scope with a composite sync signal at TP213.  
Adjust the scope so that it can display a waveform of approx. 2H.
4. Adjust R254 so that amplitude of overshoot appearing on the white peak side shows  $90 \pm 5\%$  of a 100% Y signal amplitude.
5. Adjust R253 so that undershoot appearing on the sync tip side shows  $50\% \pm 5\%$  of a 100% Y signal amplitude.

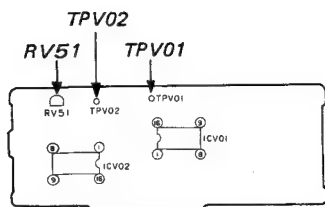


1. Feed the color bar signal to the line input terminal.
2. Connect the oscilloscope to Q308 emitter and trigger the scope with a composite sync signal at TP213. Adjust the scope so that it can display a waveform of approx. 2H.
3. Adjust R351 so that a minimum variation of sync tip voltage is obtained when EE mode is changed to TV still mode by pushing the TV Still button.

1. Feed the color bar signal to the line input terminal, and set the VCR to the record mode (SP mode)
2. Connect the oscilloscope to TP401 and trigger the scope with a composite sync signal (TP213). Adjust the scope so that it can display a waveform of approx. 2H.
3. Adjust R451 to obtain a red signal amplitude of  $220 \pm 20\text{mVp-p}$ .



1. Play back the alignment tape ST-N1 (color bar signal, SP mode)
2. Connect the frequency counter to TP208 and set the measurement range to a position which allows reading accuracy of 1Hz.
3. Adjust R455 until the frequency reading of  $3579545 \pm 20\text{Hz}$  is obtained.



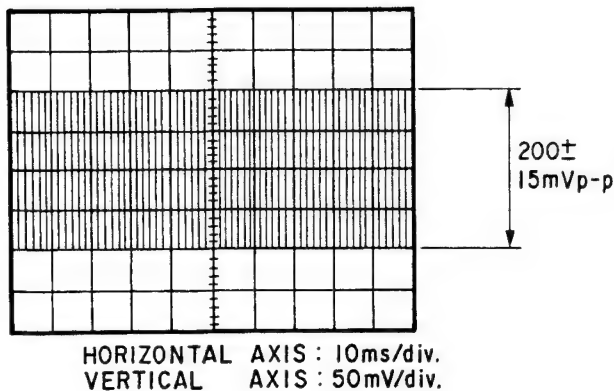
Pre Amp P.C. Board

#### 2-3-11. Recording FM voltage

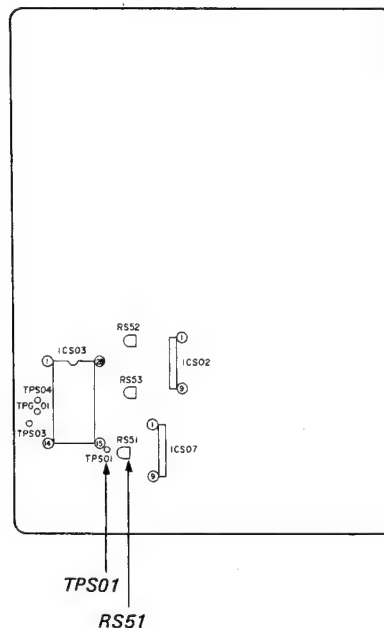
1. Short-circuit the line input terminal. Do not apply any signal to the terminal.
2. Set the VCR to the record mode (EP).
3. Connect the oscilloscope's ground terminal to TPV02 and the scope probe to TPV01.
4. Adjust RV51 until amplitude of 50% white signal shows  $200 \pm 15\text{mVp-p}$ .

#### Note:

When connecting oscilloscope's ground terminal, connect it to TPV02. Do not use any other ground terminal.



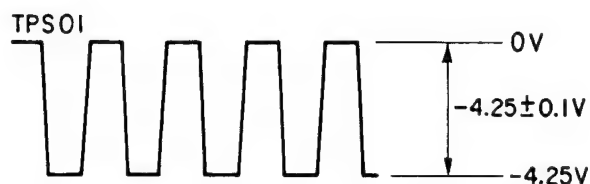
#### 2-4. PCM Circuit



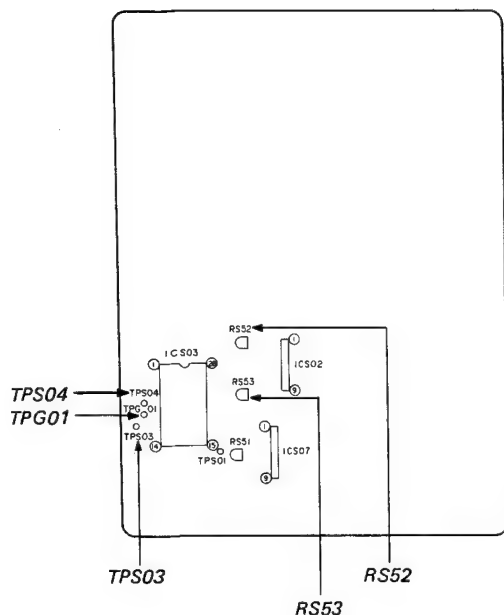
PCM P.C. Board

#### 2-4-1. L-channel non-input integration voltage

1. Set the VCR to EE or REC mode.
2. Connect the oscilloscope to TPS01.
3. Short-circuit the line input terminal to feed no signal.
4. Place the VCR/PCM switch in the PCM position.
5. Adjust RS51 until the voltage E shows  $-4.25\text{V} \pm 0.1\text{V}$ .



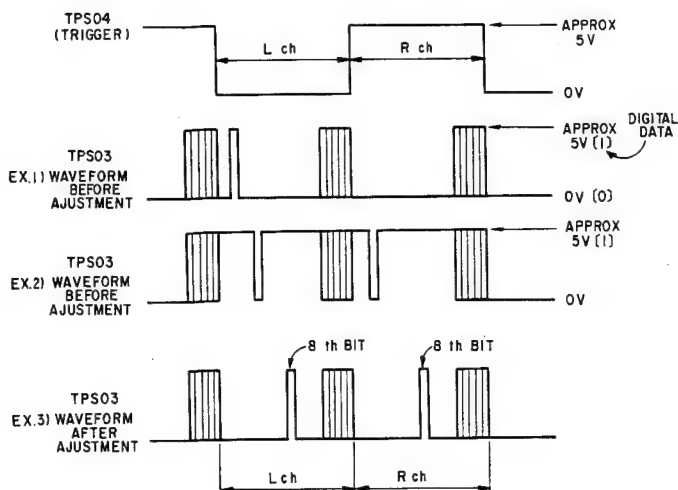




#### PCM P.C. Board

##### 2-4-2. Digital data code offset

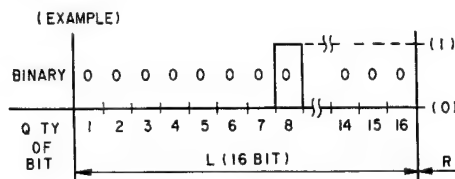
1. Set the VCR to EE or REC mode.
2. Connect the oscilloscope to TPS03, and trigger the scope with the signal at TPS04.
3. Adjust RS53 so that 8th bit shows "1" ("H" level).



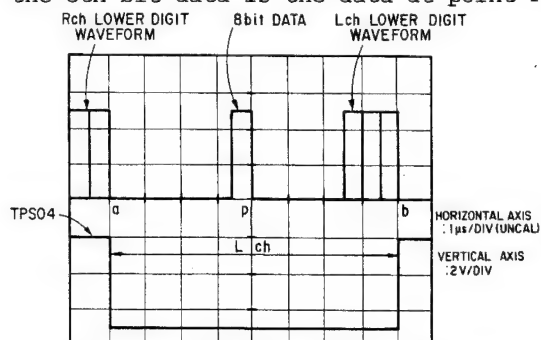
4. If the adjustment is impossible, readjust the item 2-4-1.

#### Note:

[How to identify the 8th bit data]  
Each left and right channel digital data consists of 16 bits.

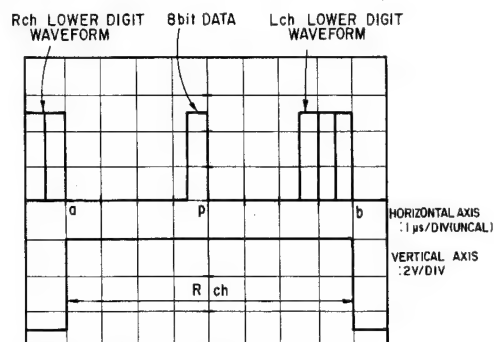


1. Observe waveform of L-channel data with an oscilloscope.
2. Adjust the scope so that the L-channel waveform is just positioned between 1st horizontal scale (point a) and 9th scale (point b).  
[Channel changing point can be identified by observing that the lowest digit waveform is blurred (vertical stripes).]
3. Since the L-ch data (16 bits) are positioned between the points a and b, the 8th bit data is the data at point P.

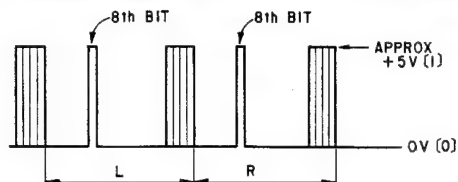


##### 2-4-3. R-channel non-input integration voltage

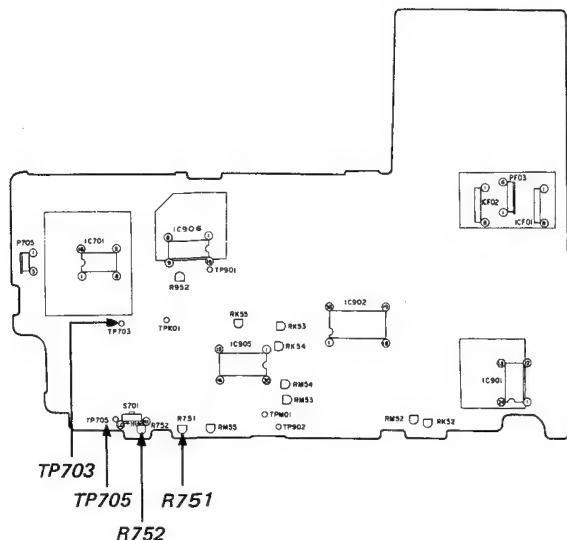
1. Display the R-ch waveform in the same way as shown previously. (Change over the oscilloscope's SLOPE SW.)
2. Adjust RS52 so that the R-ch waveform shows the same waveform as that of the L-ch.



##### L & R channel waveforms after adjustment



## 2-5. Conventional audio circuit



Audio P.C. Board

### Note:

Set front panel control switches as shown below:

Audio output select switch . . . . . Conventional audio mode  
Input select switch . . . LINE  
TV/VCR switch . . . . . VCR  
PCM switch . . . . . off

- \* Use AUDIO (Hi-Fi/Normal) IN JACK L-ch as the external signal input terminal.
- \* Connect 47K ohm loads to both L and R channel audio output terminals.
- \* Perform the head azimuth adjustment and head height adjustment perfectly, and then proceed to the adjustments 2-5-1, 2-5-5.

### 2-5-1. Playback output level (Audio line output terminal, R751)

1. Connect a millivoltmeter to the audio line output terminal and play back the alignment tape (ST-N1).
2. Adjust R751 until the output level shows  $-6\text{dB} \pm 0.5\text{dB}$ .

### 2-5-2. Record/Erase oscillator frequency (TP703)

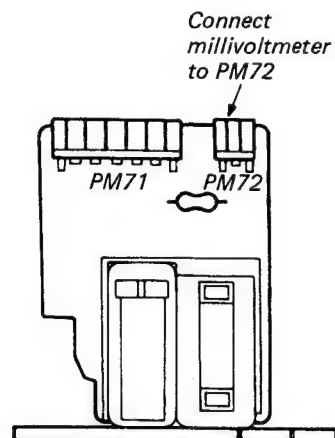
1. Connect a frequency counter to TP703.
2. Set the VCR to the After Recording mode and check the frequency counter shows  $65\text{ kHz} \pm 6.5\text{ kHz}$ , (f1).
3. Set the VCR to the REC mode, and check the reading of frequency counter. If the frequency is higher by more than 1.8 kHz from the frequency of After Recording mode (f1), set S701 to the "Lo" position, and if lower by more than 1.8 kHz, set the switch to the "Hi" position.
4. Make sure the reading of the frequency counter is  $f1 \pm 1.8\text{ kHz}$ .

### 2-5-3. Bias current (PM72, R752)

1. Short-circuit the audio line input terminals. Disconnect any signal lines from the input terminals.
2. Connect a millivoltmeter to PM72, pins 1 - 2 (GND).
3. Set the VCR to the REC mode and adjust R752 to obtain  $3.2 \pm 0.05\text{mVrms}$ .

### Note:

Value adjusted too high lowers high frequency response and too low increases distortion.



### 2-5-4. Record/Playback output level (Audio line output terminal)

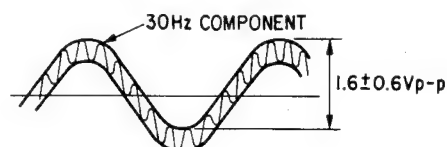
1. Feed 400 Hz,  $-8\text{ dB}$ s signal to the AUDIO Line input terminal.
2. Connect a millivoltmeter to the AUDIO Line out terminal. Terminate the video Line input terminal with a 75 ohm resistor.
3. Record the signal in SP mode and play back the signal just recorded.
4. Make sure reading of the millivoltmeter shows  $-6\text{ dB} \pm 3\text{ dB}$ .

### 2-5-5. Auto-find signal recording (TP705)

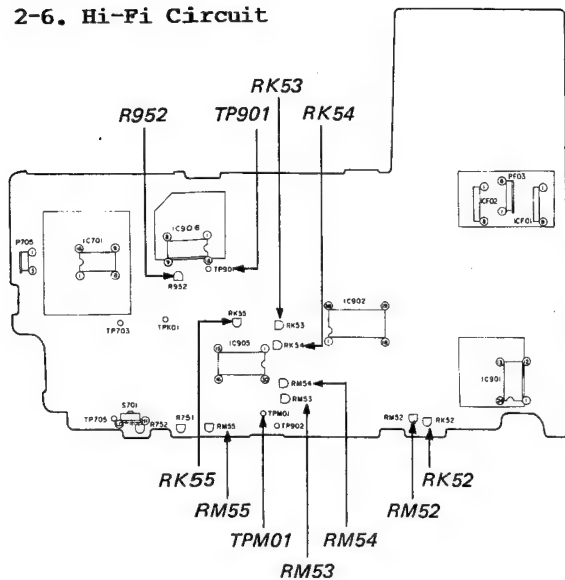
1. Connect the oscilloscope to TP705.
2. Connect pin 5 of P705 to GND.
3. Set the VCR to REC mode. Make sure the auto find signal (30 Hz sinewave) is  $1.6 \pm 0.6\text{Vp-p}$ .
4. Set the VCR to STOP mode and disconnect pin 5 of P705 from GND.
5. Set the VCR to REC mode, and make sure the auto find signal is observed for the first 1 sec. Also make sure the auto find signal appears when AVI key is pushed during recording.

### Notes:

- \* The auto-find signal is not generated during synchronous editing operation. Check the signal by changing operation mode from STOP to REC.
- \* When pin 5 (Cue I/O) of P705 is grounded, the auto-find signal is always generated during recording.



## 2-6. Hi-Fi Circuit



Audio P.C. Board

### Notes:

- \* Unless otherwise specified, set the switches on the front panel as follows:  
Output select switch. . . . .STEREO mode  
Meter select switch. . . . .LEVEL  
Input select switch. . . . .LINE  
AUDIO REC select switch. . . .AUTO  
Tape speed select switch. . . .SP  
PCM switch. . . . .OFF
- \* Connect 47k ohm resistors to the left and right channel audio line output terminals.
- \* Use AUDIO (Hi-Fi/Normal) IN JACK as the external signal input terminals.

### 2-6-1. Level meter adjustment (Audio line output terminal, level meter, RM52, RK52)

1. Connect a millivoltmeter to the audio line output terminal (L-ch).
2. Manually select the left channel output to turn on "L" indicator inside the level meter.
3. Set the AUDIO REC Select SW to MANUAL and adjust input level so that audio line output level shows -6dBs (400 Hz).
4. Adjust RM52 until 0dB indicator on the L channel side just lights up.
5. Adjust RK52 until 0dB indicator on the R channel side just lights up.
6. Next, check following items.
7. When the input level is changed to -7dBs audio line output level, check the 0dB indicator turns off.
8. When the input level is changed to -5dBs, check the 0dB indicator lights up.

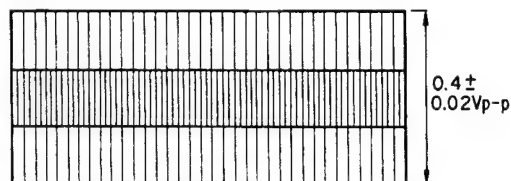
### 2-6-2. Carrier frequency adjustment (TPM01, TPK01, RM54, RK54)

1. Short-circuit the audio line input terminals. Do not feed any signal to the terminals.
2. Connect the frequency counter to TPM01.
3. Set the VCR to the record mode.
4. Adjust RM54 until the frequency counter shows  $1.3 \text{ MHz} \pm 10 \text{ kHz}$ .

5. Connect the frequency counter to TPK01 and adjust RK54 until the frequency counter shows  $1.7 \text{ MHz} \pm 10 \text{ kHz}$ .

### 2-6-3. Record level (TP901, R952)

1. Short-circuit the audio line input terminals. Do not feed any signal to the terminals.
2. Connect the oscilloscope to TP901.
3. Set the VCR to the record mode.
4. Adjust R952 to obtain  $0.40 \pm 0.02 \text{ Vp-p}$ , more than 15 sec after the recording start.



### 2-6-4. Playback output level (Audio line output terminal, RM55, RK55)

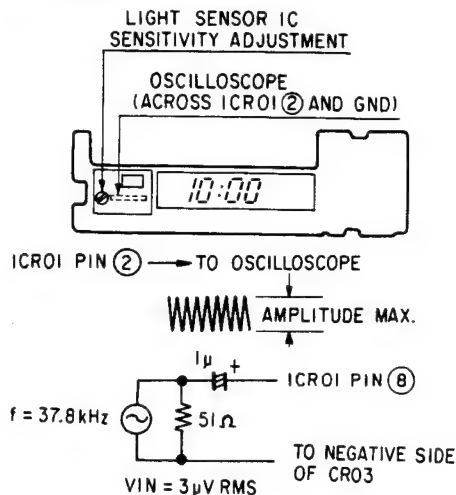
1. Connect the millivoltmeter to the audio line output terminal.
2. Play back the alignment tape (ST-NF).
3. Adjust RM55 until the line output level of L channel shows -6dBs (388mVrms)  $\pm 0.5 \text{ dB}$ .
4. Adjust RK55 until the line output level of R channel shows -6dBs (388mVrms)  $\pm 0.5 \text{ dB}$ .

### 2-6-5. FM deviation (Audio line output terminal RM53, RK53)

1. Apply -8dBs (309mVrms), 400 Hz to the audio line input terminals.
2. Record the signal, and play back the tape just recorded and adjust RM53 until the left channel audio line output shows -6dBs (388mVrms)  $\pm 0.5 \text{ dBs}$ .
3. Record the signal, and play back the tape just recorded and adjust RK53 until the right channel audio line output shows -6dBs (388mVrms)  $\pm 0.5 \text{ dBs}$ .

### 2-7. Wireless Remote Control Circuit

1. Connect the oscilloscope across pin 2 of ICR01 and the ground.
2. Feed a signal of 37.8 kHz,  $3 \mu \text{Vrms}$  across pin 8 of ICR01 and (-) side of CRO3 through the network as shown.
3. Adjust LR51 for maximum amplitude on the scope display.



# SECTION 3

## SERVICING DIAGRAMS

### 1. Inspection Procedure

| Operation steps                                                         |                                                                                                                                            | Items to be confirmed                                                                                                                                                                                | Inspection block                                                                                                     | Page                                         |                                                |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------|
|                                                                         |                                                                                                                                            |                                                                                                                                                                                                      |                                                                                                                      | Block Diagram                                | Circuit Diagram                                |
| 1. AC Plug-in                                                           | Clock setting<br>Program & timer setting                                                                                                   | Clock display<br>Clock setting operation                                                                                                                                                             | Power (AC system)<br>Timer counter                                                                                   | 3-13<br>3-17                                 | 3-59<br>3-69                                   |
| 2. Power SW ON                                                          | Timer/counter, memory,<br>SP/EP, TV/VCR SW (in<br>VCR), Channel selection,<br>EE picture sharpness &<br>tone quality, TV/VCR<br>SW (in TV) | Mode display lamp<br>TV receive condition<br>Channel select operation,<br>EE picture sharpness &<br>tone quality, Signal level,<br>Stereo                                                            | Power<br>Logic<br>RF, Reception<br>Video (EE, Rec mode)<br>Audio (EE, Rec mode)<br>Conventional Audio<br>Hi-Fi Audio | 3-13<br>3-21<br>3-15<br>3-36<br>3-43<br>3-43 | 3-59<br>3-75<br>3-63<br>3-94<br>3-120<br>3-115 |
| 3. Cassette-in and<br>Cassette-out                                      | Cassette-in<br>Cassette loading<br>Eject<br>Cassette out                                                                                   | F/L mecha. operation<br>Cassette loading operation<br>Eject operation<br>Indicator lamp<br>Abnormal sound                                                                                            | Logic                                                                                                                | 3-21                                         | 3-75                                           |
| 4. Key entry<br>Operation<br>Remote-control                             | REC, PLAY<br>Cue/Review<br>Still, Double speed/slow<br>Reverse slow/FF/REW<br>Memory<br>(Rewind ON → Play ON)                              | Indicator lamp<br>Each mode operation<br>(Tape drive operation)<br>Abnormal sound<br>Memory                                                                                                          | Logic<br>Remote control block                                                                                        | 3-21<br>3-137                                | 3-75<br>3-138                                  |
| 5. Special Functions<br>Audio Power ON<br>Auto Play<br>Auto Rewind      | Cassette-in at Power OFF<br>Tape whose tabs are<br>folded is inserted.<br><br>REC/PLAY/CUE                                                 | Power ON, Cassette down<br>Power OFF after tape<br>wound<br>Rewind automatically<br>after tape wound                                                                                                 | Power<br>Logic                                                                                                       | 3-13<br>3-21                                 | 3-59<br>3-75                                   |
| 6. Playback Functions<br>Picture sharpness<br>Tone Quality<br>Others    | PLAY (Test tape:<br>ST-NI/ST-NF)<br>Cue/Review<br>Still/Slow                                                                               | Resolution, S/N<br>Hue, Saturation,<br>Color unevenness,<br>Color dropout,<br>Sound distortion,<br>Level variation,<br>Picture noise, Jitter,<br>Picture swing,<br>Skew distortion, Flicker,<br>Beat | Video PLAY system<br>Conventional Audio<br>PLAY system<br>Hi-Fi Audio PLAY<br>system<br>Servo system                 | 3-36<br>3-43<br>3-43<br>3-32                 | 3-94<br>3-120<br>3-115<br>3-87                 |
| 7. REC/PLAY<br>Functions<br>Picture sharpness<br>Tone Quality<br>Others | REC/PLAY                                                                                                                                   | Resolution, S/N<br>Hue, Saturation,<br>Color unevenness,<br>Color dropout,<br>Sound distortion,<br>Level variation,<br>Picture noise, Jitter,<br>Picture swing,<br>Skew distortion, Flicker,<br>Beat | Video PLAY system<br>Conventional Audio<br>PLAY system<br>Hi-Fi Audio PLAY<br>system<br>Servo system                 | 3-36<br>3-43<br>3-43<br>3-32                 | 3-94<br>3-120<br>3-115<br>3-87                 |

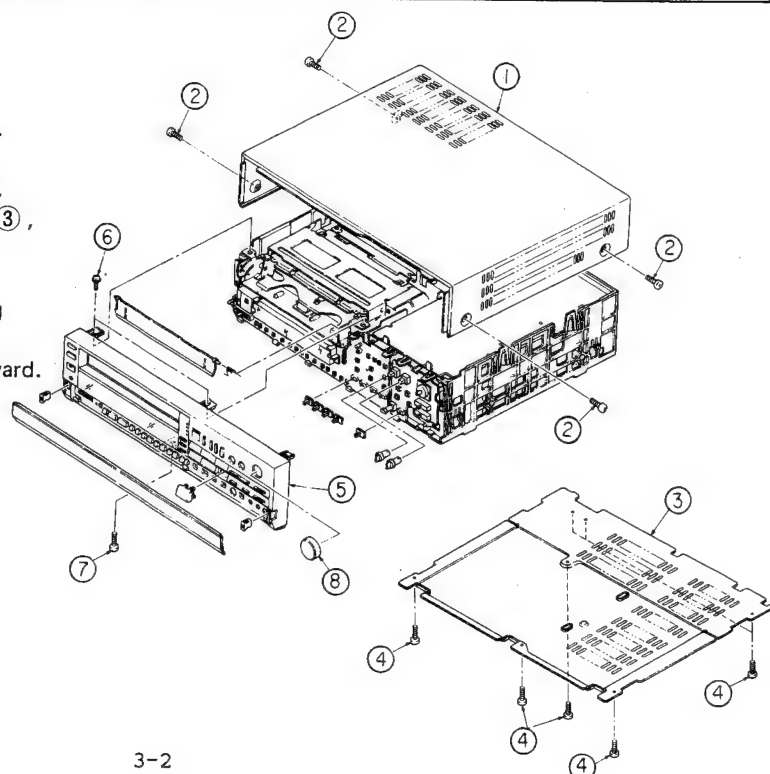
| Operation steps        |                                                                                                                                        | Items to be confirmed                                                                                                     | Inspection block                                                                                                                  | Page          |                 |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|
|                        |                                                                                                                                        |                                                                                                                           |                                                                                                                                   | Block Diagram | Circuit Diagram |
| 8. PCM Play<br>PCM Rec | PCM SW ON<br>Play PCM recorded tape                                                                                                    | PCM display lamp ON<br>PCM tracking display LED ON<br>Abnormal sound<br>Play picture noise<br>Monitor picture bit pattern | Timer block<br>PCM PLAY system<br>Servo PLAY system<br>Video PLAY system<br>PCM Rec system<br>Video Rec system                    | 3-17          | 3-69            |
|                        |                                                                                                                                        |                                                                                                                           |                                                                                                                                   | 3-48          | 3-133           |
|                        |                                                                                                                                        |                                                                                                                           |                                                                                                                                   | 3-32          | 3-87            |
|                        |                                                                                                                                        |                                                                                                                           |                                                                                                                                   | 3-36          | 3-94            |
| 9. Timer Screen        | Timer screen ON                                                                                                                        | Display tube<br>Clock screen,<br>Program screen<br>Light pen tone<br><br>Light pen operation                              | Timer block<br>Timer screen<br>Video signal selection<br>Timer screen<br>Hi-Fi Audio selection<br>Light pen input<br>Timer screen | 3-17          | 3-69            |
|                        |                                                                                                                                        |                                                                                                                           |                                                                                                                                   | 3-29          | 3-81            |
| 10. Multi Picture      | EE Multi series<br>Multi memo<br>Multi still<br>PLAY Multi series<br>Multi memo<br>Multi still<br>Forward/Reverse Slow<br>Multi series | Skew<br><br>Picture swing<br><br>Color fade away/<br>Hue shear<br>Distortion<br><br>Picture malfunction                   | Logic, Memory control,<br>Servo, Video<br><br>Logic, Memory control,<br>Servo, Video<br>Memory control, Video                     | 3-21          | 3-75            |
|                        |                                                                                                                                        |                                                                                                                           |                                                                                                                                   | 3-36          | 3-94            |
|                        |                                                                                                                                        |                                                                                                                           |                                                                                                                                   | 3-40          | 3-106           |
|                        |                                                                                                                                        |                                                                                                                           |                                                                                                                                   | 3-32          | 3-87            |

#### How to use the table

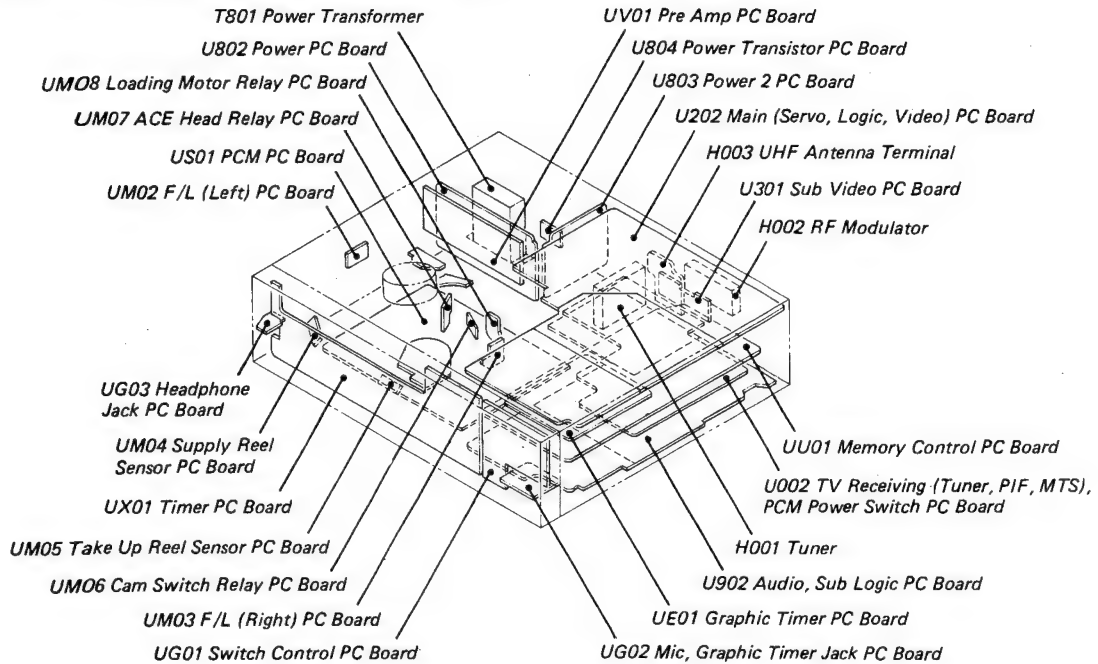
1. When inspecting a defective VCR, proceed according to the steps shown in the table.
2. Check the items to be confirmed for each operation step.
3. If a problem is found on the item, check waveforms (level) referring to the block diagram relating to the items.
4. Use PC board pattern diagram and schematic diagram to examine the circuit precisely.
5. After completion of the repair work, check steps 1 ~ 10 again.

## 2. Removal of Cabinet

1. Disconnect power cord plug from AC outlet.
2. Remove 4 screws ② securing top cover ①.
3. Remove top cover ① by sliding it backward.
4. Remove 7 screws ④ securing bottom cover ③, and remove the bottom cover.
5. Remove 1 knob ⑧.
6. Remove 2 screws ⑥ and 1 screw ⑦ securing front panel ⑤.
7. Remove the front panel ⑤ by sliding it forward.



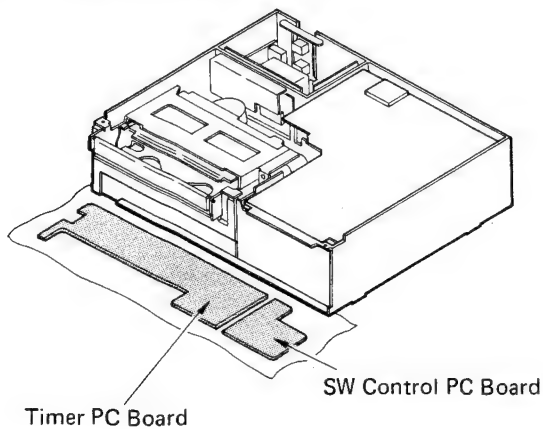
### 3. Electrical Units Location Diagram



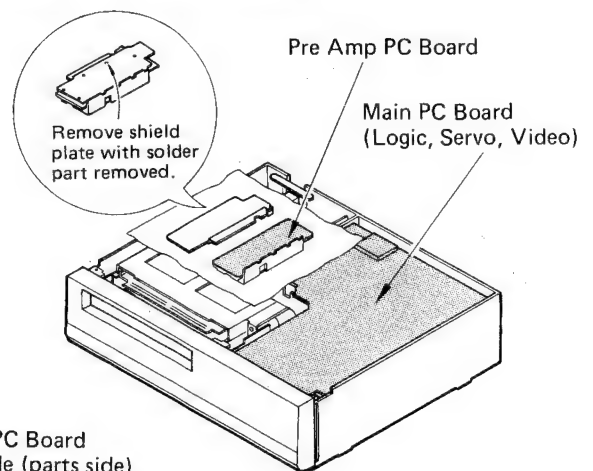
### 4. Standing PC Board for Servicing

Set each PC Board on the insulation plate or in the holder slot of cabinet, with each fixed screws removed. PC Boards below are shown in rear side (Solder side).

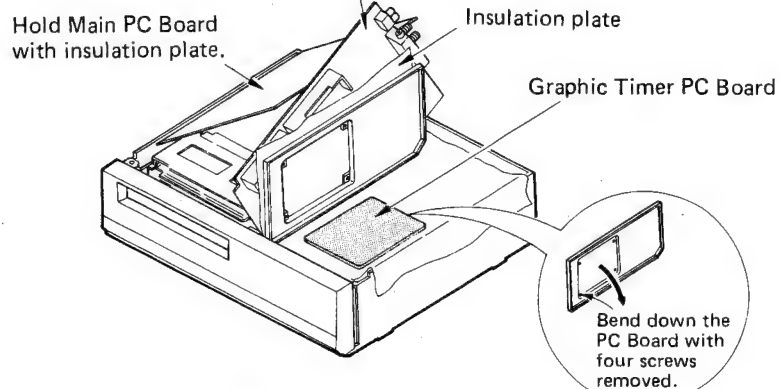
#### 4-1. Timer, SW Control PC Board



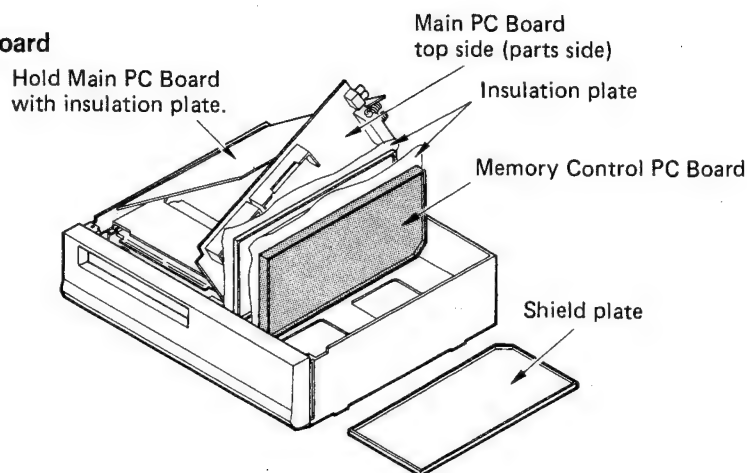
#### 4-2. Main, Pre Amp PC Board



#### 4-3. Graphic Timer PC Board

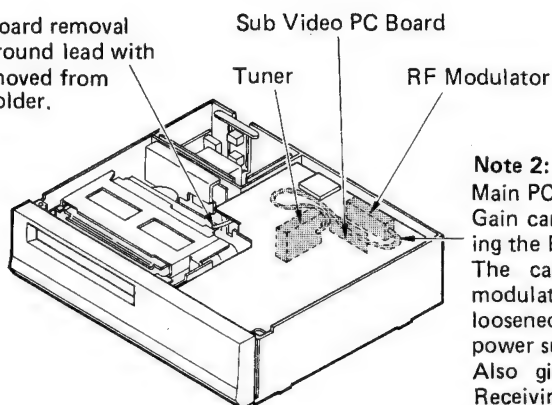


#### 4-4. Memory Control PC Board



##### Note 1:

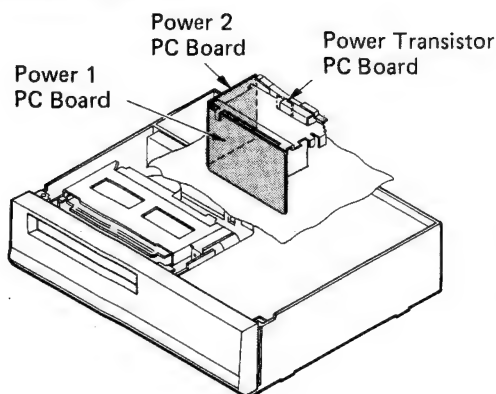
Main PC Board removal  
Remove ground lead with screws removed from cassette holder.



##### Note 2:

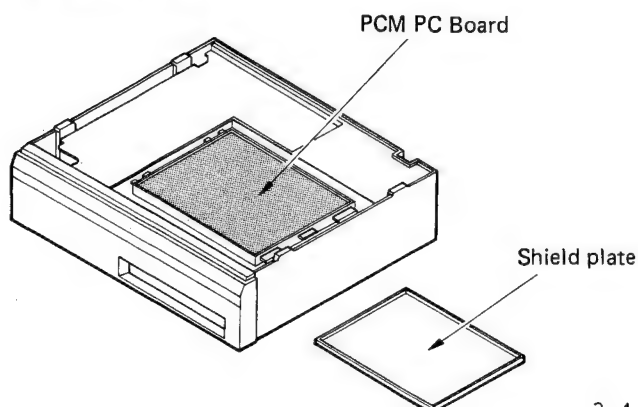
Main PC Board mounting  
Gain care to location of coaxial cable connecting the RF Modulator and the tuner. The cable should be located between the modulator and the sub-video PC Board, and loosened at space between the tuner and the power supply.  
Also give care to the cables when the TV Receiving PC Board is removed and remount it.

#### 4-5. Power PC Board

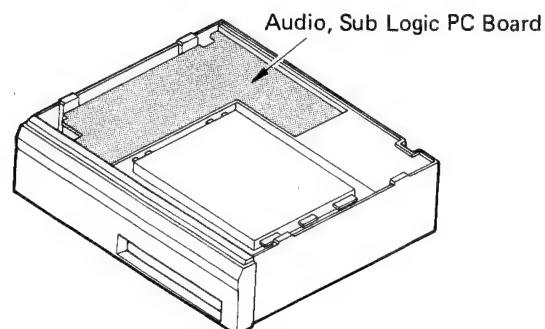


When removing power supply unit, remove the unit with connectors P807, P804, P805, P808 and P803 removed, and then connect the connectors.

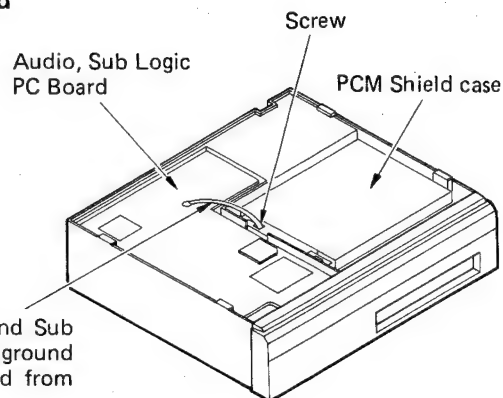
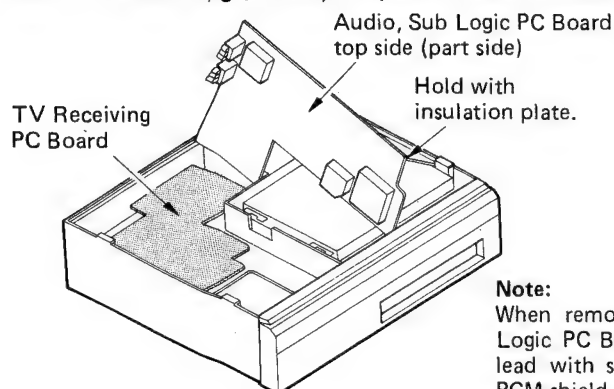
#### 4-6. PCM PC Board



#### 4-7. Audio, Sub Logic PC Board



#### 4-8. TV Receiving (Tuner, PIF, MTS) PCM Power SW PC Board



**Note:**  
When removing Audio and Sub Logic PC Board, remove ground lead with screws removed from PCM shield case.

#### 4-9. Cautions

##### 1. Solderless connector

Connectors bearing following number use solderless type. So, if excessive force is applied to the lead, it may be broken at the connected part.

Sufficient care will be given when handling the connectors.

| Main PC Board, Logic Circuit (Connector No.) | PC Board Name (Connector No.) |
|----------------------------------------------|-------------------------------|
| (P604)                                       | F/L PC Board (WF31)           |

##### 2. Bottom plate (iron plate) screw mounting

Electrical performance will be lowered if the bottom plate is not fixed completely.

So when replacing the bottom plate, always mount it using all screws removed.

##### 3. When servicing, always make sure the connector which connects the main PC Board and the preamplifier PC Board is not disconnected.

#### Precautions for Part Replacement

- In the schematic diagram, parts marked  $\triangle$  (ex.  $\triangle$  F801) are critical part to meet the safety regulations, so always use the parts bearing specified part codes (SN) when replacing them.
- Using the parts other than those specified shall violate the regulations, and may cause troubles such as operation failures, fire, etc.

#### Solid resistor indication

| Resistor | 1/8W film | P type film | U type film | Solid | Oxide film | Metal film | Cement | Fuse |
|----------|-----------|-------------|-------------|-------|------------|------------|--------|------|
| Symbol   | None      | P           | U           | S     | R          | W          | W      | RF   |

| Tolerance | $\pm 2\%$ | $\pm 5\%$ | $\pm 10\%$ | $\pm 20\%$ |
|-----------|-----------|-----------|------------|------------|
| Symbol    | G         | J         | None       | None       |

- All film type and oxide film type resistors used are  $\pm 5\%$ , so the tolerance symbol was not indicated for them.

#### Capacitor indication

| Description          | Symbol | Capacitance, unit                                    | Capacitance allowance                                                                 |
|----------------------|--------|------------------------------------------------------|---------------------------------------------------------------------------------------|
| Electrolytic         | $\pm$  | $\mu F$                                              | Not indicated                                                                         |
| Special electrolytic |        |                                                      | Indicated                                                                             |
| Plastic film         |        | $\mu F$ : indicated with numbers below decimal point | Indicated below $\pm 5\%$ (J), indicated below $\pm 0.5pF$ , not indicated for others |
| Ceramic              |        | $pF$ : indicated with numbers over decimal point     |                                                                                       |
| Trimmer              |        | $pF$                                                 | Not indicated                                                                         |

**Note:** No working voltage is indicated for capacitors rated at 50V except electrolytic capacitors.

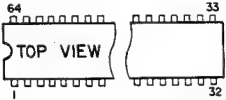
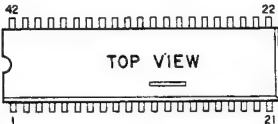
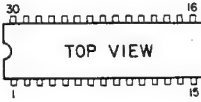
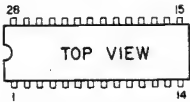
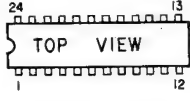

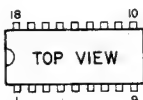
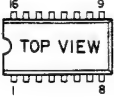

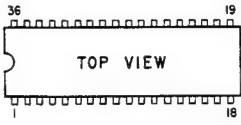
#### Waveform and voltage measurement

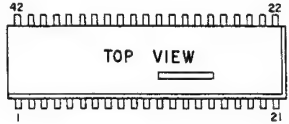
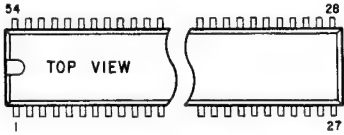
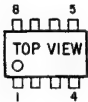
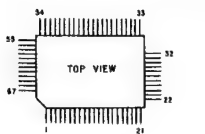
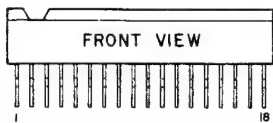
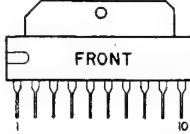
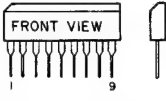
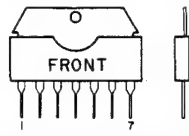
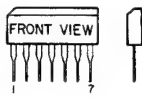
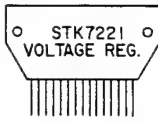
- Measurement of waveform and voltage at each section in the color circuits was conducted with sufficient service color bar signal being received and reproduced in normal conditions.
- Waveforms and voltage values for the remaining circuit were measured with a broadcasting signal normally received, so they may vary slightly according to the programs being received. Use them as a measure for servicing.
- All voltage values except the waveforms are expressed in DC and measured by a digital voltmeter.

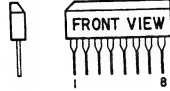
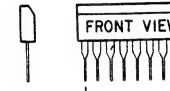
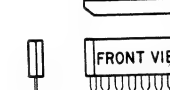










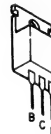



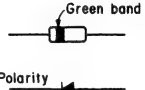
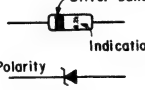

## 5. Part Configuration and their Symbols

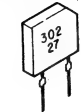
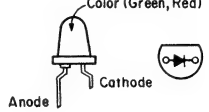
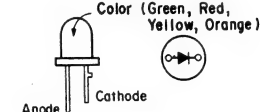
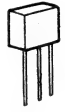

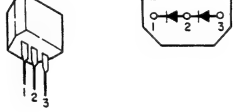
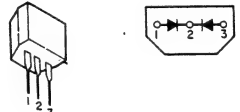
### 1. ICs

| NAME                                                                                                                                                                                  | SHAPE                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 47C460AN9438<br>D75208CW-112                                                                                                                                                          |    |
| TD6361N-D2<br>47C800N2227Z                                                                                                                                                            |    |
| M51365SP, TD6709N<br>TA8624N<br>TA8604N<br>TA8625N<br>BA6800AS                                                                                                                        |    |
| 42C70N8116<br>TD6704P                                                                                                                                                                 |   |
| TA8606N<br>TA8626N<br>TCA8502P<br>TMM2015BP-15                                                                                                                                        |  |
| LA7090                                                                                                                                                                                |  |
| MB81416-12<br>TMM41464P-12                                                                                                                                                            |  |
| TA8007P, TC4052BP, MB40576<br>TI.8708P, TC74HC00P, TC4053BP<br>TC4538BP, MC10102P, TA8609P<br>TA7772P, MC10138P, TA8619P<br>TD6350P, MB40776, TC74HC161P<br>TMM4164AP-12, TC74HC4538P |  |
| TA75902P, LA6324, TC4011BP<br>NJM2902N, TC74HC00P, TC74HC74P<br>TC4066BP, TC74HC02P, TC74HC125P<br>TA75339P, AN1319, TC74HC03P<br>TC4030BP, TC74HC066P                                |  |
| TA8627N                                                                                                                                                                               |  |

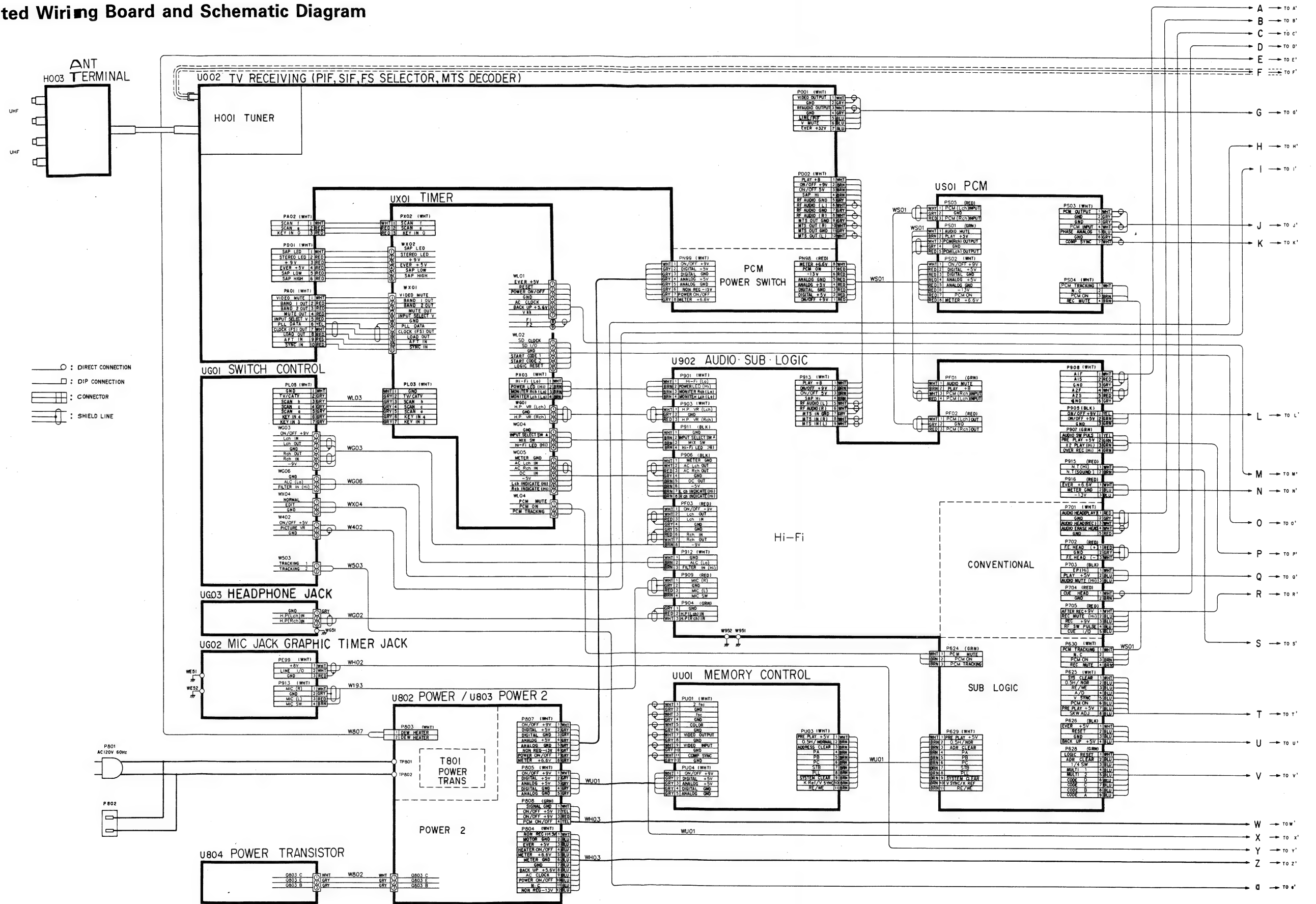
| NAME                                                                                | SHAPE                                                                                 |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| TGA8601                                                                             |    |
| TMS3475BNL                                                                          |    |
| NJM353D                                                                             |    |
| 17C022AF0118<br>17C014AF0109                                                        |   |
| BA7750AL                                                                            |  |
| TA7288P                                                                             |  |
| TA7348P, TA75393S<br>TA7350P, UPC1474HA<br>TA7365P, TA7320P<br>TC5081AP<br>NJM2068S |  |
| TA7267P                                                                             |  |
| BA222<br>TA7361AP<br>TA7347P<br>TA7374P                                             |  |
| STK7241                                                                             |  |

| NAME                                                                                                                                       | SHAPE                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| M5216L<br>M50254P                                                                                                                          |    |
| M5201L                                                                                                                                     |    |
| STA342M                                                                                                                                    |    |
| TA79L005P<br>TA78L005AP<br>TA79L009P                                                                                                       |    |
| TA79005P<br>TA79010P                                                                                                                       |   |
| 2. TRANSISTORS                                                                                                                             |                                                                                     |
| NAME                                                                                                                                       | SHAPE                                                                               |
| 2SC1928-O .2SC2878-A<br>2SC388ATM<br>2SA562TM-Y<br>2SC1959-Y<br>2SC1815-O                                                                  |  |
| 2SK30ATM-GR                                                                                                                                |  |
| 2SA966-Y<br>2SC2236-Y<br>2SA1020-Y                                                                                                         |  |
| 2SA1048-Y .RN1204 .2SC2458BL<br>2SC2458-Y .RN1203 .RN1206<br>RN2204 .RN2205 .RN2203<br>RN1201 .2SC2668-Y .RN1205<br>RN1202 .RN2202 .RN2201 |  |

| NAME                                                                               | SHAPE                                                                                 |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 2SD549                                                                             |    |
| 2SD1198A-Q                                                                         |    |
| 2SD686<br>2SB834-Y                                                                 |    |
| 2SA1015-Y<br>2SD1405-BL                                                            |    |
| PN202S-S.TH<br>PN202S-R.TH                                                         |   |
| 3. DIODES                                                                          |                                                                                       |
| NAME                                                                               | SHAPE                                                                                 |
| 1S1555(TV)                                                                         |  |
| 1SS176<br>1SS99<br>1SS177<br>1SS132                                                |  |
| 05Z7.5X .05Z5.6Y<br>05Z5.1X .05Z8.2X<br>05Z3.9Y .ERC01-02FL<br>05Z13Y<br>EQA02-05D |  |
| UPC574J                                                                            |  |

| NAME                            | SHAPE                                                                                 |
|---------------------------------|---------------------------------------------------------------------------------------|
| PII-302                         |    |
| TL0C163<br>TL0163               |    |
| GL450V<br>TLUR163<br>TLG113(FA) |    |
| 1B2Z1                           |    |
| 1SS200                          |   |
| 1SS227                          |  |
| 1SS201                          |  |

# 6. Printed Wiring Board and Schematic Diagram

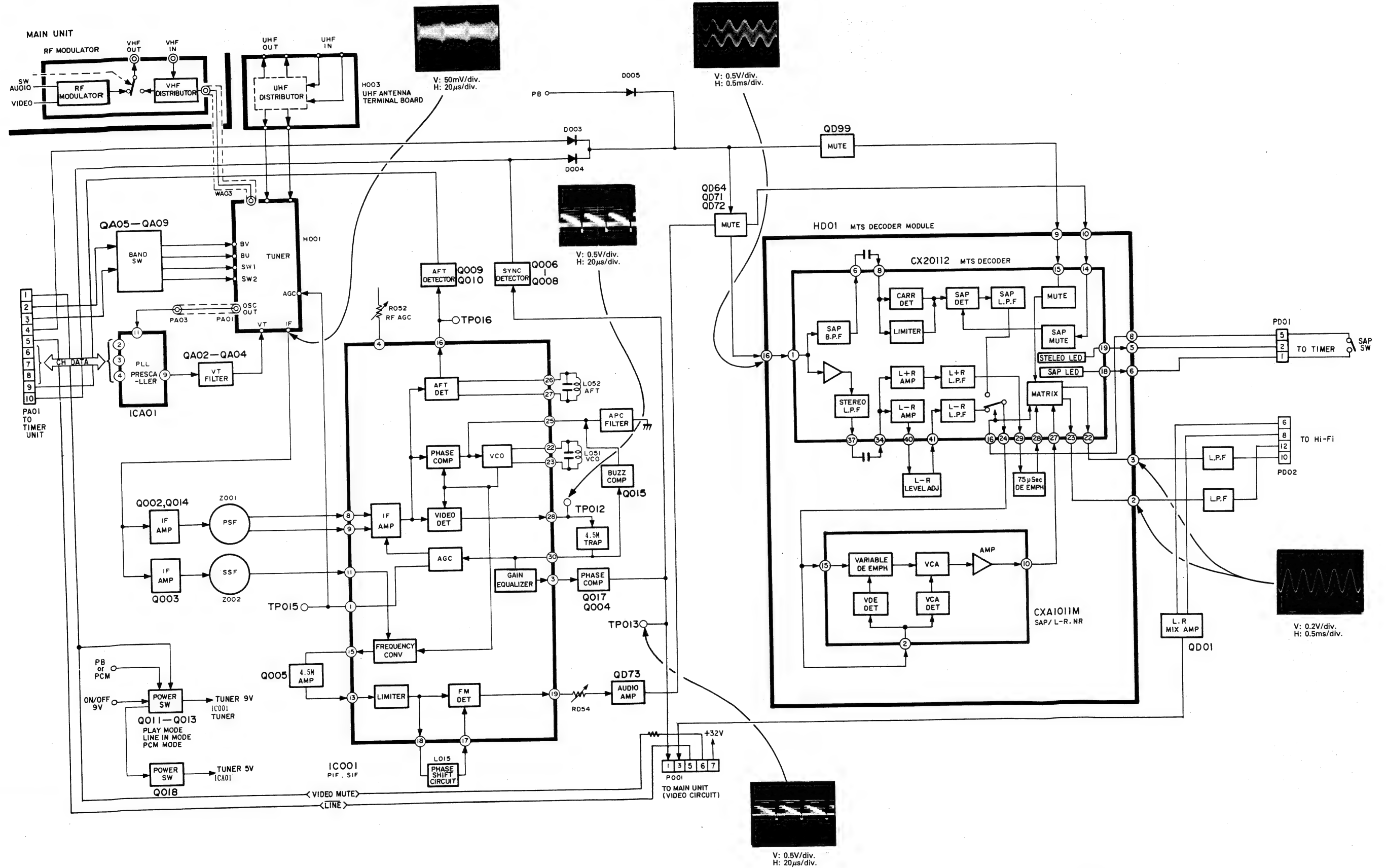




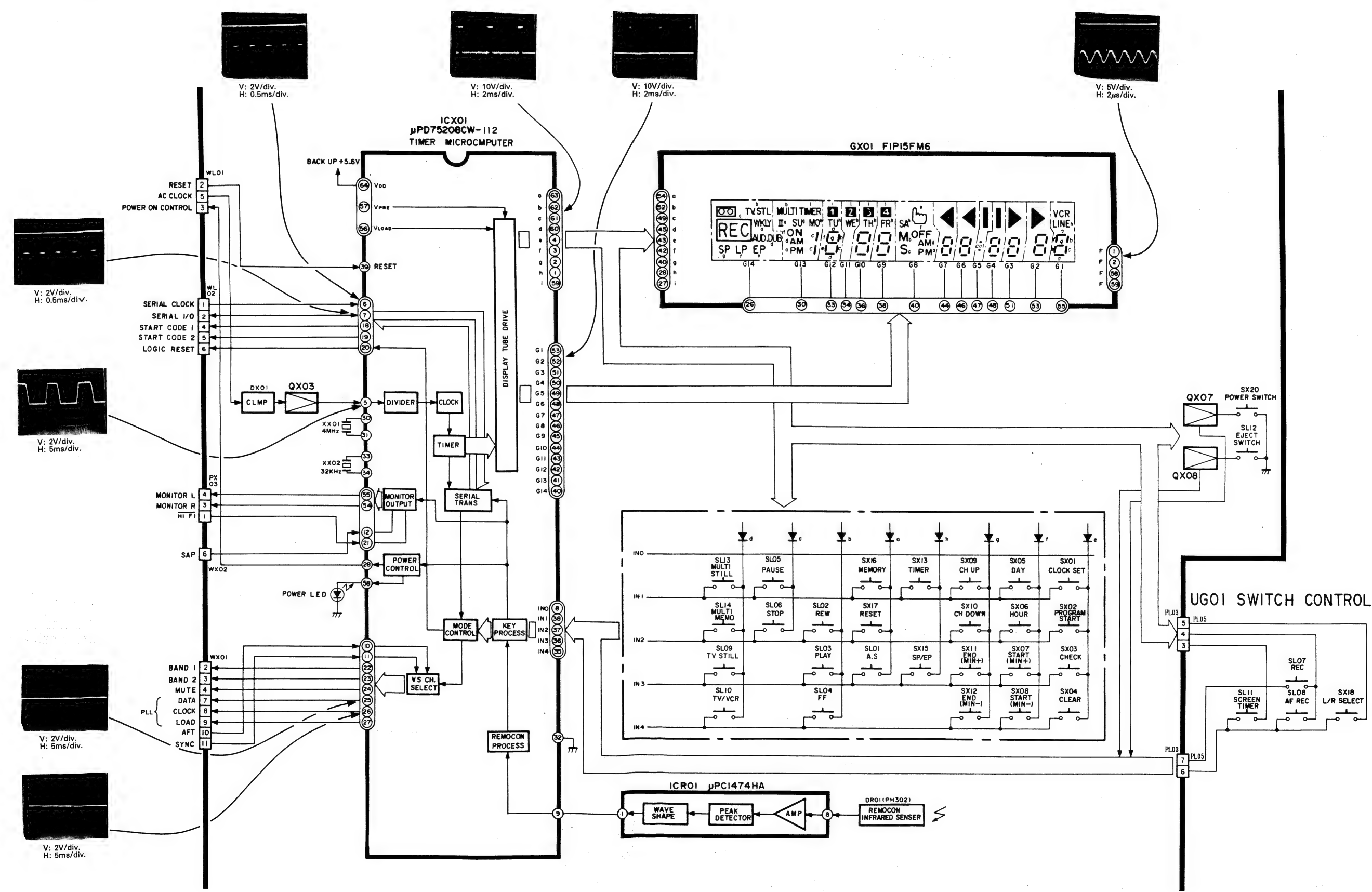
| POWER<br>SUPPLY | POWER<br>SUPPLY |
|-----------------|-----------------|
|-----------------|-----------------|



# 8-1. TV Receiving Block Diagram (Tuner, PIF, MTS)

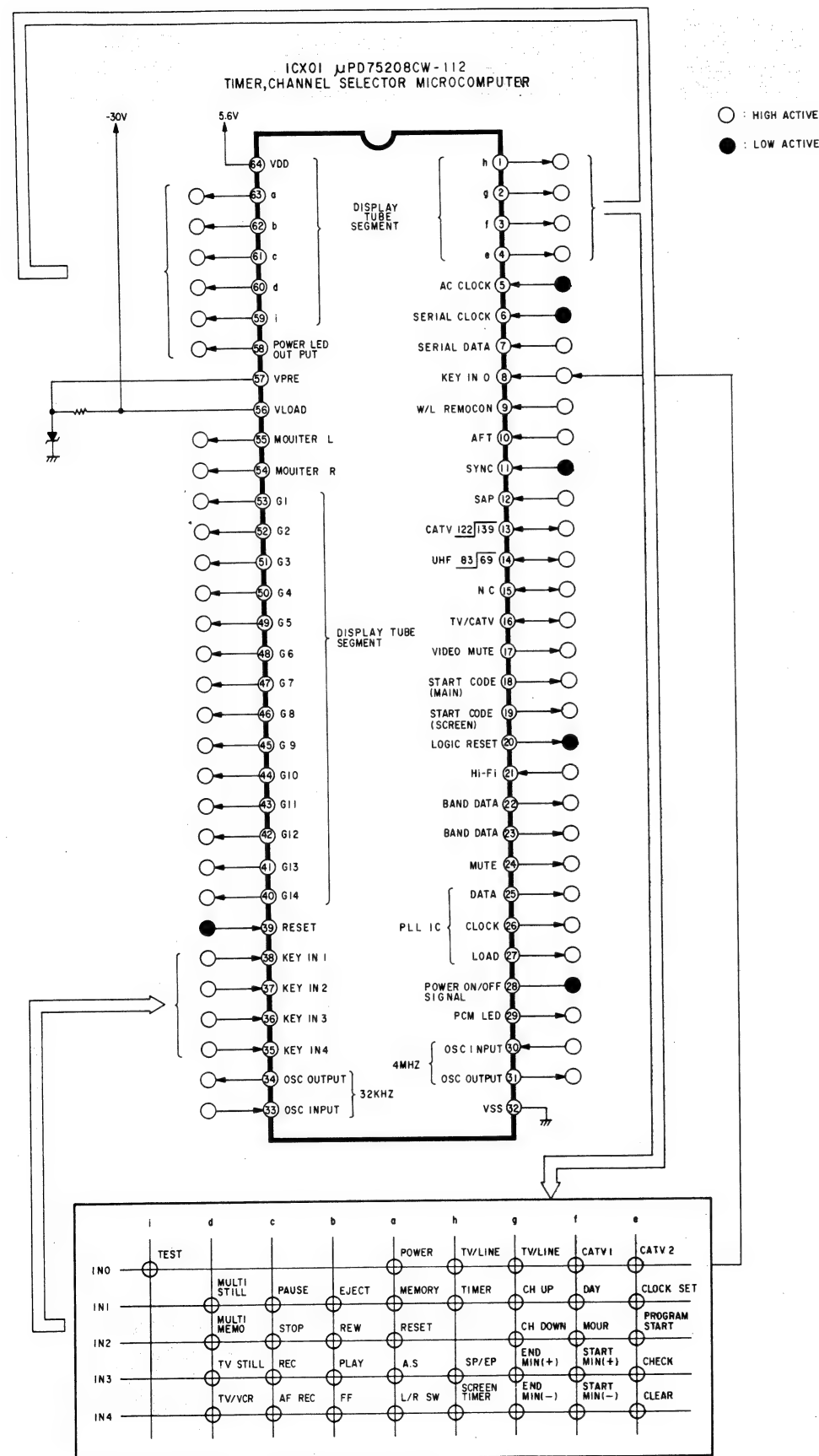


9-1. Timer, Display Block Diagram

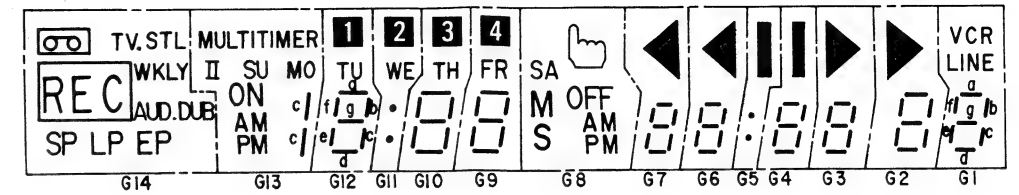


TIMER      TIMER





# GX01 FIP15FM6

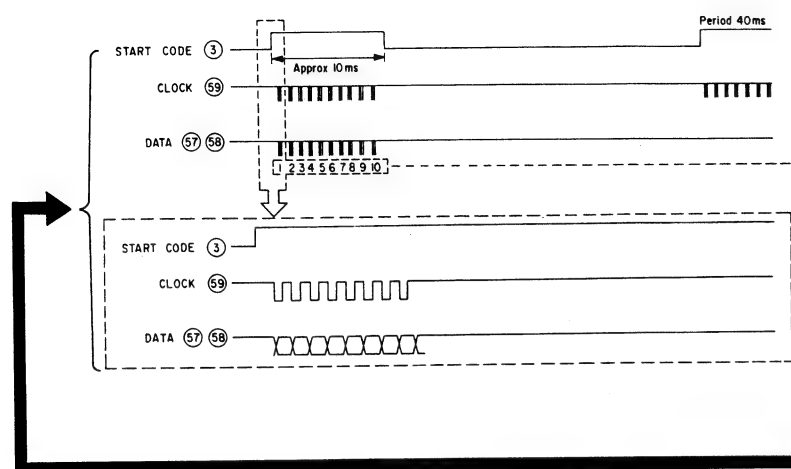


## Display Pattern

|   | G14    | G13   | G12 | G11 | G10 | G9 | G8   | G7 | G6 | G5  | G4 | G3 | G2   | G1  |
|---|--------|-------|-----|-----|-----|----|------|----|----|-----|----|----|------|-----|
| a | WKLY   | PM    | a   | col | a   | a  | PM   | a  | a  | col | a  | a  | a    | a   |
| b | TV.STL | MULTI | b   | /   | b   | b  | M    | b  | b  | /   | b  | b  | b    | b   |
| c | REC    | c     | c   | /   | c   | c  | S    | c  | c  | /   | c  | c  | c    | c   |
| d | AUDDUB | AM    | d   | /   | d   | d  | AM   | d  | d  | /   | d  | d  | d    | d   |
| e | EP     | II    | e   | /   | e   | e  | hand | e  | e  | /   | e  | e  | e    | e   |
| f | LP     | ON    | f   | /   | f   | f  | OFF  | f  | f  | /   | f  | f  | f    | f   |
| g | SP     | SU    | g   | /   | g   | g  | /    | g  | g  | /   | g  | g  | g    | g   |
| h | MO     | TU    | WE  | TH  | FR  | SA | ◀    | ◀  |    |     | ▶  | ▶  | LINE |     |
| i | TIMER  | 1     | 2   | 3   | 4   | /  | /    | /  | /  | /   | /  | /  | /    | VCR |

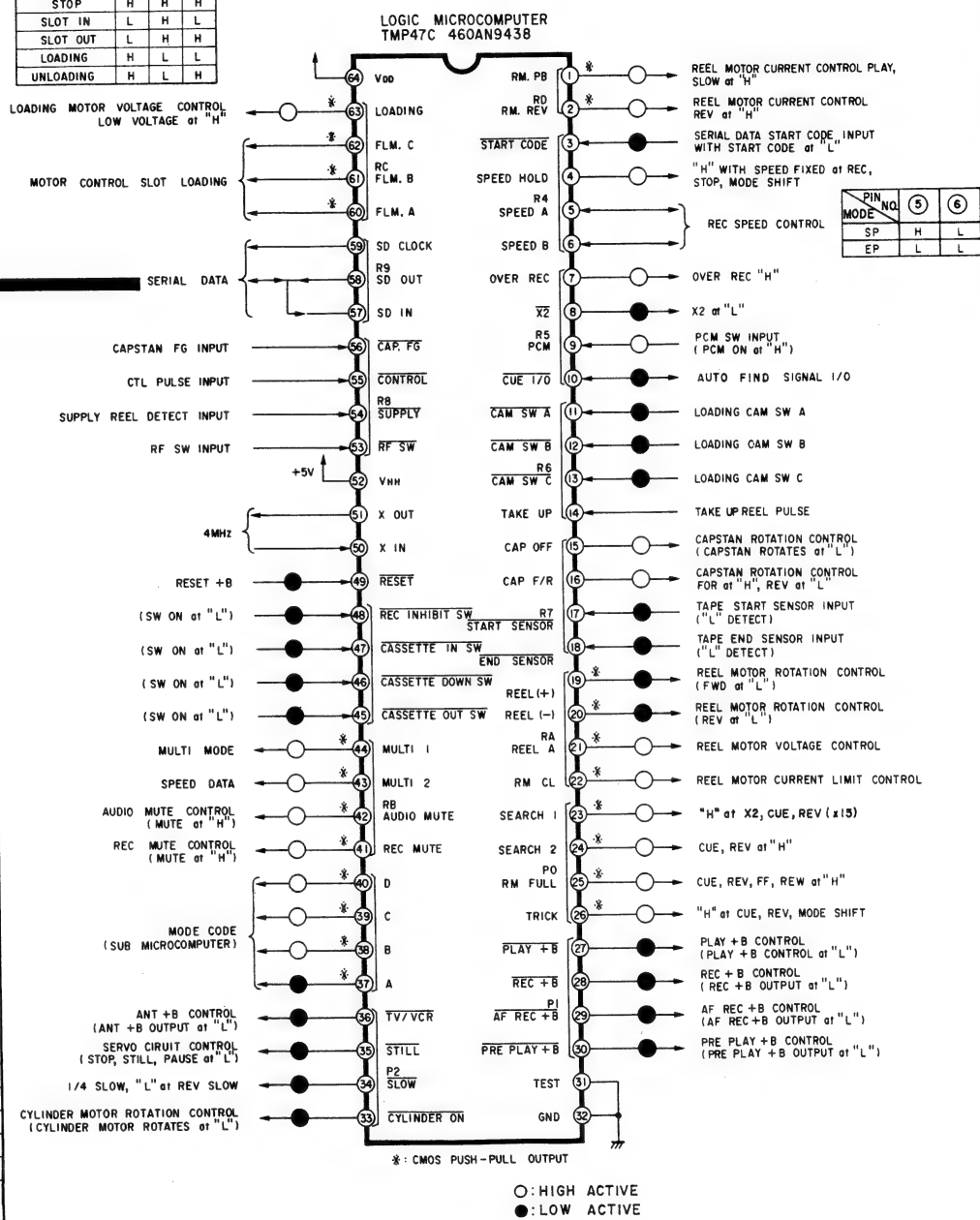
LOGIC                      LOGIC





| NO. | Transmit Micro Computer | DATA                                         |
|-----|-------------------------|----------------------------------------------|
| 1   | TIMER                   | POWER ON/OFF, COUNTER MEMORY, AV1            |
| 2   | LOGIC                   | MODE DATA, TAPE SPEED, REC INHIBIT,  DISPLAY |
| 3   | TIMER                   | TV/VCR, KEY DATA                             |
| 4   | LOGIC                   | COUNTER MODE, MODE DATA                      |
| 5   | TIMER                   | COUNTER, BACK UP                             |
| 6   | LOGIC                   | COUNTER                                      |
| 7   | TIMER                   | COUNTER, BACK UP                             |
| 8   | LOGIC                   | COUNTER                                      |
| 9   | TIMER                   | CHECK, SUM                                   |
| 10  | LOGIC                   | CHECK, SUM                                   |

| MODE      | PIN NO. | (60) | (61) | (62) |
|-----------|---------|------|------|------|
| STOP      |         | H    | H    | H    |
| SLOT IN   |         | L    | H    | L    |
| SLOT OUT  |         | L    | H    | H    |
| LOADING   |         | H    | L    | L    |
| UNLOADING |         | H    | L    | H    |



Logic mode shift table (1)

| Current mode            | Input | Eject | REC       |
|-------------------------|-------|-------|-----------|
| SLOT IN                 |       | ○     | ×         |
| SLOT OUT                |       | ×     | ×         |
| STOP                    |       | ○     | ○         |
| PLAY                    |       | ○     | ×         |
| FF PLAY                 |       | ○     | ×         |
| REW PLAY                |       | ○     | ×         |
| FF                      |       | ○     | ×         |
| REW                     |       | ○     | ×         |
| STILL PICTURE           |       | ○     | REC PAUSE |
| REC                     |       | ×     | —         |
| REC PAUSE               |       | ×     | ×         |
| AF REC                  |       | ×     | ×         |
| AF REC PAUSE            |       | ×     | ×         |
| X2 PLAY                 |       | ○     | ×         |
| 1/4 SLOW                |       | ○     | ×         |
| REV SLOW                |       | ○     | ×         |
| TIMER REC               |       | ×     | ×         |
| TV STILL (STOP)         |       | **    | ○         |
| ON Screen Program (OSP) |       | **    | ○         |

Note: 1/4 SLOW, REV SLOW and X2 PLAY mod  
\* : When being pushed, run a tape

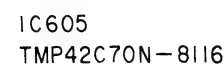
IC601 Output polarity

| PIN NO. | MODE       | SLOT IN | SLOT OUT | LOADING | UN-LOADING | STOP | FF | REW | PLAY | X2 | STILL | 1/4 SLOW | REV SLOW | CUE EP×15 | REVIEW EP×15 | REC | REC PAUSE | AF REC | AF REC PAUSE | TV STILL | POWER OFF | EE MULTI SERIES(STOP) |
|---------|------------|---------|----------|---------|------------|------|----|-----|------|----|-------|----------|----------|-----------|--------------|-----|-----------|--------|--------------|----------|-----------|-----------------------|
| 1       | RM. PB     | L       | L        | L       | L          | L    | L  | L   | H    | L  | L     | H        | L        | L         | L            | L   | H         | L      | H            | L        | L         | L                     |
| 2       | RM. REV    | L       | L        | H       | L          | L    | L  | L   | L    | L  | L     | L        | L        | L         | L            | H   | L         | L      | H            | L        | L         | L                     |
| 4       | SPEED HOLD | H       | H        | H       | H          | H    | H  | H   | L    | L  | H     | L        | L        | L         | L            | H   | H         | L      | H            | H        | H         | H                     |
| 7       | OVER REC   | L       | L        | L       | L          | L    | L  | L   | L    | L  | L     | L        | L        | L         | L            | L   | L         | L      | L            | L        | L         | L                     |
| 8       | X2         | H       | H        | H       | H          | H    | H  | H   | H    | H  | H     | H        | H        | H         | H            | L   | H         | H      | H            | H        | H         | H                     |
| 10      | CUE I/O    | H       | H        | H       | H          | H    | H  | H   | H    | H  | H     | H        | H        | H         | H            | L   | H         | H      | H            | H        | H         | H                     |
| 15      | CAP OFF    | H       | H        | H       | H          | H    | H  | H   | L    | L  | H     | L        | L        | L         | L            | L   | H         | L      | H            | H        | H         | H                     |
| 16      | CAP F/R    | H       | H        | H       | H          | H    | H  | H   | H    | H  | H     | H        | L        | H         | L            | H   | H         | H      | H            | H        | H         | H                     |
| 19      | REEL(+)    | H       | H        | L       | H          | H    | L  | H   | H    | L  | H     | H        | L        | H         | L            | H   | H         | H      | H            | H        | H         | H                     |
| 20      | REEL(-)    | H       | H        | L       | H          | H    | L  | H   | H    | L  | H     | H        | L        | H         | L            | H   | H         | H      | H            | H        | H         | H                     |
| 21      | REEL A     | H       | H        | L       | L          | L    | L  | L   | L    | L  | H     | L        | L        | L         | L            | L   | H         | L      | H            | L        | H         | L                     |
| 22      | PM. CL     | L       | L        | L       | H          | L    | L  | L   | L    | L  | L     | L        | L        | L         | L            | L   | L         | L      | L            | L        | L         | L                     |
| 23      | SEARCH 1   | L       | L        | L       | L          | L    | L  | L   | L    | L  | L     | L        | L        | L         | L            | L   | L         | L      | L            | L        | L         | L                     |
| 24      | SEARCH 2   | L       | L        | L       | L          | L    | L  | L   | L    | L  | L     | L        | L        | L         | L            | L   | L         | L      | L            | L        | L         | L                     |
| 25      | RM. FULL   | L       | L        | L       | L          | L    | H  | H   | L    | L  | L     | L        | L        | L         | L            | H   | L         | L      | L            | L        | L         | L                     |
| 26      | TRICK      | L       | L        | L       | L          | L    | L  | L   | L    | L  | L     | L        | L        | L         | L            | H   | L         | L      | L            | L        | L         | L                     |
| 27      | PLAY+B     | H       | H        | H       | H          | H    | H  | H   | L    | L  | L     | L        | L        | L         | L            | L   | H         | H      | L            | L        | H         | H                     |
| 28      | REC+B      | H       | H        | H       | H          | H    | H  | H   | H    | H  | H     | H        | H        | H         | H            | L   | L         | H      | H            | H        | H         | H                     |
| 29      | AF REC+B   | H       | H        | H       | H          | H    | H  | H   | H    | H  | H     | H        | H        | H         | H            | L   | L         | H      | L            | H        | H         | H                     |
| 30      | Pre PLAY+B | H       | H        | H       | H          | H    | H  | H   | L    | L  | L     | L        | L        | L         | L            | L   | H         | H      | L            | L        | H         | H                     |
| 33      | DRUM ON    | H       | H        | L       | L          | H    | H  | H   | L    | L  | L     | L        | L        | L         | L            | L   | H         | H      | L            | L        | H         | H                     |
| 34      | SLOW       | H       | H        | H       | H          | H    | H  | H   | H    | H  | H     | H        | H        | H         | H            | L   | L         | L      | L            | L        | L         | L                     |
| 35      | STILL      | L       | L        | L       | L          | L    | L  | L   | L    | L  | L     | L        | L        | L         | L            | L   | L         | L      | L            | L        | L         | L                     |
| 36      | TV/VTR     |         |          |         |            |      |    |     |      |    |       |          |          |           |              |     |           |        |              |          |           |                       |
| 37      | A          | L       | L        | L       | L          | L    | L  | L   | H    | L  | L     | SP EP    | SP EP    | L         | L            | L   | L         | H      | L            | H        | L         | L                     |
| 38      | B          | L       | L        | L       | L          | L    | L  | L   | L    | L  | H     | L        | H        | L         | L            | L   | L         | L      | H            | H        | L         | L                     |
| 39      | C          | L       | L        | L       | L          | L    | L  | L   | H    | H  | L     | L        | L        | L         | L            | L   | L         | H      | L            | H        | L         | L                     |
| 40      | D          | L       | L        | L       | L          | L    | L  | L   | H    | H  | L     | L        | H        | L         | L            | L   | L         | H      | L            | H        | L         | L                     |
| 41      | REC MUTE   | H       | H        | H       | H          | H    | H  | H   | H    | H  | H     | H        | H        | H         | H            | L   | L         | L      | L            | H        | H         | H                     |
| 42      | AUDIO MUTE | L       | L        | L       | L          | L    | L  | L   | L    | L  | H     | H        | H        | H         | H            | L   | L         | L      | L            | H        | L         | L                     |
| 43      | MULTI 2    | L       | L        | L       | L          | L    | L  | L   | L    | L  | L     | L        | L        | L         | L            | L   | L         | L      | L            | L        | L         | L                     |
| 44      | MULTI 1    | L       | L        | L       | L          | L    | L  | L   | L    | L  | L     | L        | L        | L         | L            | L   | L         | L      | L            | L        | L         | L                     |

Logic mode shift table (2)

| Previous mode | Key input           | Multi ser |
|---------------|---------------------|-----------|
| EE mode       | STOP                | Lo        |
|               | Multi Series        | Lo        |
|               | Multi Series        | M         |
|               | Multi Series        | Hi        |
|               | Memo                | 1         |
|               | Memo                | 2         |
|               | Memo                | 3         |
|               | Memo                | 4         |
|               | Multi still Lo.M.Hi | ○         |
|               | TV still            | ○         |
| PLAY mode     | PLAY                | ○         |
|               | Multi series        | Lo        |
|               | Multi series        | M         |
|               | Multi series        | Hi        |
|               | Memo                | 1         |
|               | Memo                | 2         |
|               | Memo                | 3         |
| STILL mode    | Memo                | 4         |
|               | Multi still Lo.M.Hi | ○         |
|               | STILL               | ○         |
| SLOW mode     | SLOW                | ○         |
|               | Multi series        | Lo        |
|               | Multi series        | M         |
|               | Multi series        | Hi        |
| REV SLOW mode | REV SLOW            | ○         |
|               | Multi series        | Lo        |
|               | Multi series        | M         |
|               | Multi series        | Hi        |
|               | x2                  | ×         |
|               | FF/REW              | ○         |
|               | CUE/REV             | ×         |
|               | REC. AF REC         | ×         |



MULTI 1. MULTI 2SUB- $\mu$ COM CODE TABLE

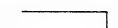
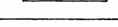























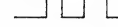






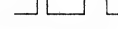
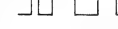





| No. | CODE |   |   |   | MODE                         |
|-----|------|---|---|---|------------------------------|
|     | D    | C | B | A |                              |
| 0   | 0    | 0 | 0 | 0 | EE(STOP, FF, REW)<br>CUE/REV |
| 1   | 0    | 0 | 0 | 1 | When mode<br>Shifts          |
| 2   | 0    | 0 | 1 | 0 | STILL. AF REC<br>PAUSE       |
| 3   | 0    | 0 | 1 | 1 | MULTI STILL                  |
| 4   | 0    | 1 | 0 | 0 | MULTI MEMO1                  |
| 5   | 0    | 1 | 0 | 1 | MULTI MEMO2                  |
| 6   | 0    | 1 | 1 | 0 | MULTI MEMO3                  |
| 7   | 0    | 1 | 1 | 1 | MULTI MEMO4                  |
| 8   | 1    | 0 | 0 | 0 | SP.FWD. SLOW                 |
| 9   | 1    | 0 | 0 | 1 | EP.FWD. SLOW                 |
| A   | 1    | 0 | 1 | 0 | SP. REV. SLOW                |
| B   | 1    | 0 | 1 | 1 | EP. REV. SLOW                |
| C   | 1    | 1 | 0 | 0 | X2                           |
| D   | 1    | 1 | 0 | 1 | PLAY. AF REC                 |
| E   | 1    | 1 | 1 | 0 | REC                          |
| F   | 1    | 1 | 1 | 1 | TV. STILL                    |

### SUB Microcomputer mode output table

| Terminal |          | PCM SW ON |        |             | PCM SW OFF |    |              |             |                     |                 |            |           |         |           | Mode shift |           |   |                                    |  |
|----------|----------|-----------|--------|-------------|------------|----|--------------|-------------|---------------------|-----------------|------------|-----------|---------|-----------|------------|-----------|---|------------------------------------|--|
|          |          | PLAY REC  | Others | PLAY EE REC | Still      | X2 | SLOW         | Multi still | Multi series        |                 | Multi Memo |           |         |           |            |           |   |                                    |  |
|          |          |           |        |             |            |    |              |             |                     |                 | Memo 1     | Memo 2    |         | Memo 3    |            | Memo 4    |   |                                    |  |
| 16       | SKW ADJ  | L         | L      | L           | L          | L  | L            | L           | EE. PLAY<br>SP SLOW | EP SLOW         | L          | L         |         | L         |            | L         |   | Output of previous mode is output. |  |
| 18       | PCM TRK  | OPEN      | L      | L           | L          | L  | L            | L           | L                   | L               | L          | L         |         | L         |            | L         |   |                                    |  |
| 19       | A/D      | H         | H      | H           | L          | L  | L            |             | L                   | L               | H          | H         |         | H         |            | L         |   |                                    |  |
| 20       | RE/WE    | L         | L      | L           | H          | H  | H            |             | EE<br>L             | PLAY. SLOW<br>H | EE<br>L    | PLAY<br>H | EE<br>L | PLAY<br>H | EE<br>L    | PLAY<br>H | H |                                    |  |
| 21       | SYS. CLR | L         | L      | L           | H          | H  | H            | H           | H                   | H               | H          | H         |         | H         |            | H         |   |                                    |  |
| 22       | PLL      | L         | L      | L           | H          | H  | H            |             |                     |                 |            |           |         |           |            |           |   |                                    |  |
| 23       | STB      | L         | L      | L           |            |    |              |             |                     |                 |            |           |         |           |            |           |   |                                    |  |
| 24       | PC       | L         | L      | L           | H          | H  | H            |             |                     |                 | L          |           |         |           |            | L         |   |                                    |  |
| 25       | PB       | L         | L      | L           | H          | H  | H            |             |                     |                 |            |           |         |           |            |           |   |                                    |  |
| 26       | PA       | L         | L      | L           | L          | L  | L            |             |                     |                 |            | L         |         |           |            |           |   |                                    |  |
| 27       | 0.5H/NOR | L         | L      | L           | * 1        | L  | SP H<br>EP L | H           | H                   | H               | H          | H         |         | H         |            | H         |   |                                    |  |

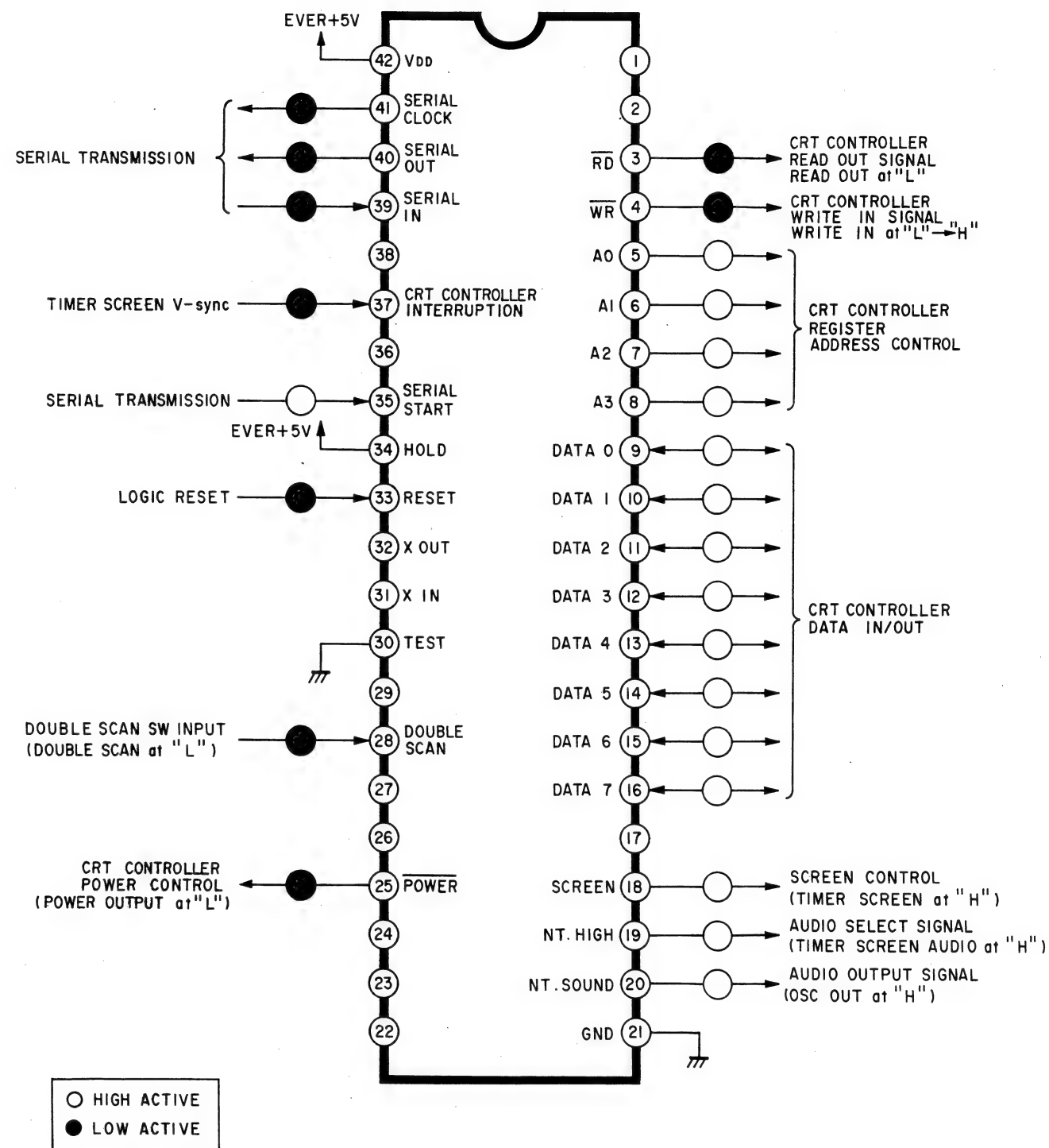
\* Decided by the previous mode.  
X2, EP SLOW: "L"  
Others: "H"

SUB Microcomputer mode output table

| Terminal |          | PCM SW ON |        | PCM SW OFF  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |           |                                                                                   |                                                                                   |                                                                                     | Mode shift                                                                          |                                    |                                                                                     |                                                                                     |   |
|----------|----------|-----------|--------|-------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|
|          |          | PLAY REC  | Others | PLAY EE REC | Still                                                                             | X2                                                                                | SLOW                                                                              | Multi still                                                                       | Multi series                                                                      |           | Multi Memo                                                                        |                                                                                   |                                                                                     |                                                                                     |                                    |                                                                                     |                                                                                     |   |
|          |          |           |        |             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |           | Memo 1                                                                            | Memo 2                                                                            | Memo 3                                                                              |                                                                                     | Memo 4                             |                                                                                     |                                                                                     |   |
| 15       | SKW ADJ  | L         | L      | L           | L                                                                                 | L                                                                                 | L                                                                                 | L                                                                                 | EE.PLAY<br>SP.SLOW                                                                | EP.SLOW   | L                                                                                 | L                                                                                 | L                                                                                   | L                                                                                   | Output of previous mode is output. |                                                                                     |                                                                                     |   |
| 16       | PCM TRK  | OPEN      | L      | L           | L                                                                                 | L                                                                                 | L                                                                                 | L                                                                                 | L                                                                                 |           | L                                                                                 | L                                                                                 | L                                                                                   | L                                                                                   |                                    |                                                                                     |                                                                                     |   |
| 17       | A/D      | H         | H      | H           | L                                                                                 | L                                                                                 | L                                                                                 |  | L                                                                                 |           | H                                                                                 | H                                                                                 | H                                                                                   | L                                                                                   |                                    |                                                                                     |                                                                                     |   |
| 20       | RE/WE    | L         | L      | L           | H                                                                                 | H                                                                                 | H                                                                                 |  | EE                                                                                | PLAY.SLOW | EE                                                                                | PLAY                                                                              | EE                                                                                  | PLAY                                                                                |                                    | EF                                                                                  | PLAY                                                                                | H |
| 21       | SYS. CLR | L         | L      | L           | H                                                                                 | H                                                                                 | H                                                                                 | H                                                                                 | H                                                                                 |           | H                                                                                 | H                                                                                 | H                                                                                   | H                                                                                   |                                    | H                                                                                   | H                                                                                   |   |
| 22       | PLL      | L         | L      | L           | H                                                                                 | H                                                                                 | H                                                                                 |  |  |           |  |  |  |  |                                    |  |                                                                                     |   |
| 23       | STB      | L         | L      | L           |  |  |  |  |  |           |  |  |  |  |                                    |  |                                                                                     |   |
| 24       | PC       | L         | L      | L           | H                                                                                 | H                                                                                 | H                                                                                 |  |  |           | L                                                                                 |  |  |  |                                    |  |                                                                                     |   |
| 25       | PB       | L         | L      | L           | H                                                                                 | H                                                                                 | H                                                                                 |  |  |           |  |  |  |  |                                    |  |                                                                                     |   |
| 26       | PA       | L         | L      | L           | L                                                                                 | L                                                                                 | L                                                                                 |  |  |           |  | L                                                                                 |    |  |                                    |  |  |   |
| 27       | 0.5H/NOR | L         | L      | L           | * 1                                                                               | L                                                                                 | SP<br>H                                                                           | EP<br>L                                                                           | H                                                                                 | H         | H                                                                                 | H                                                                                 | H                                                                                   | H                                                                                   | H                                  | H                                                                                   |                                                                                     |   |

\* Decided by the previous mode.  
X2, EP SLOW: "L"  
Others: "H"

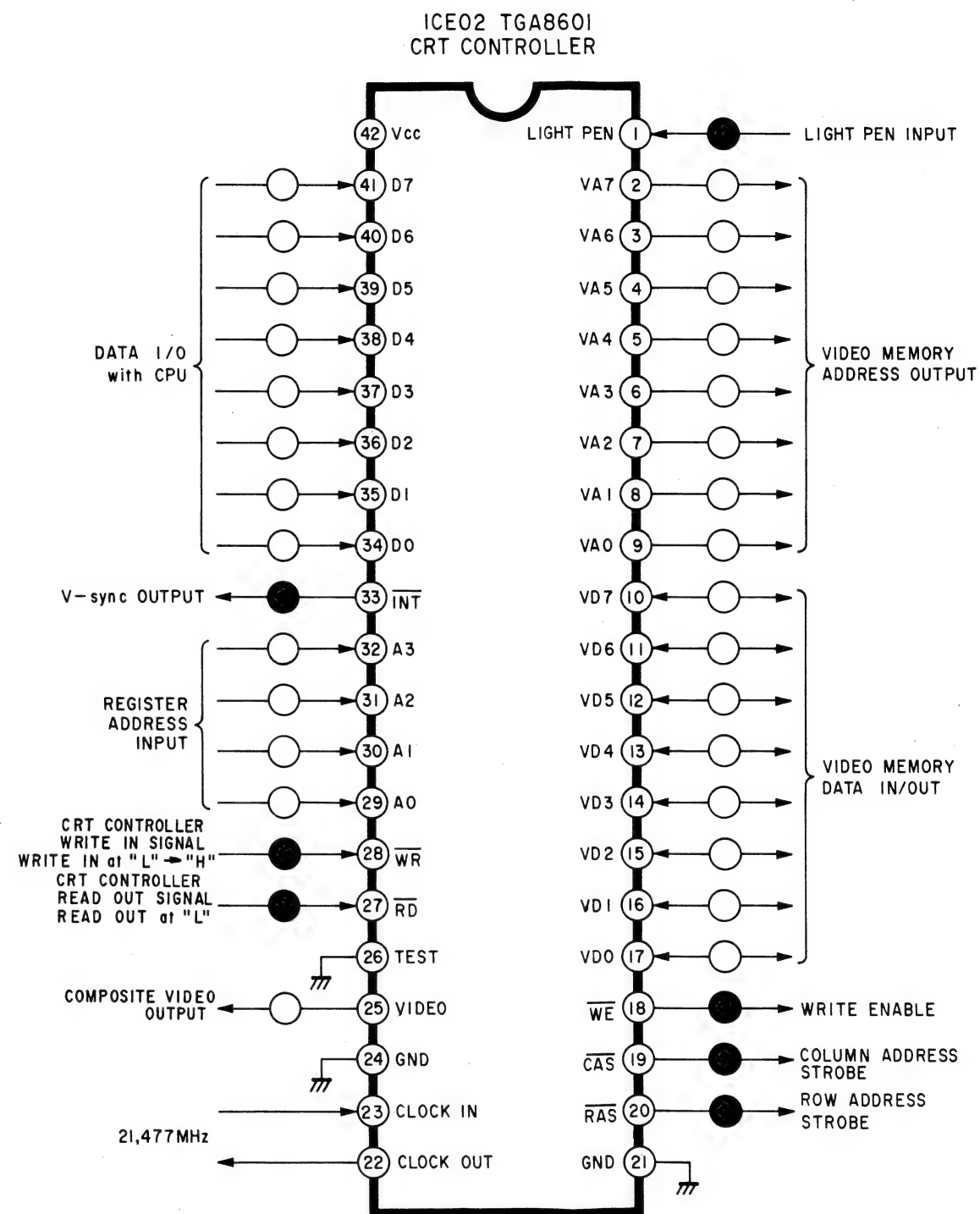
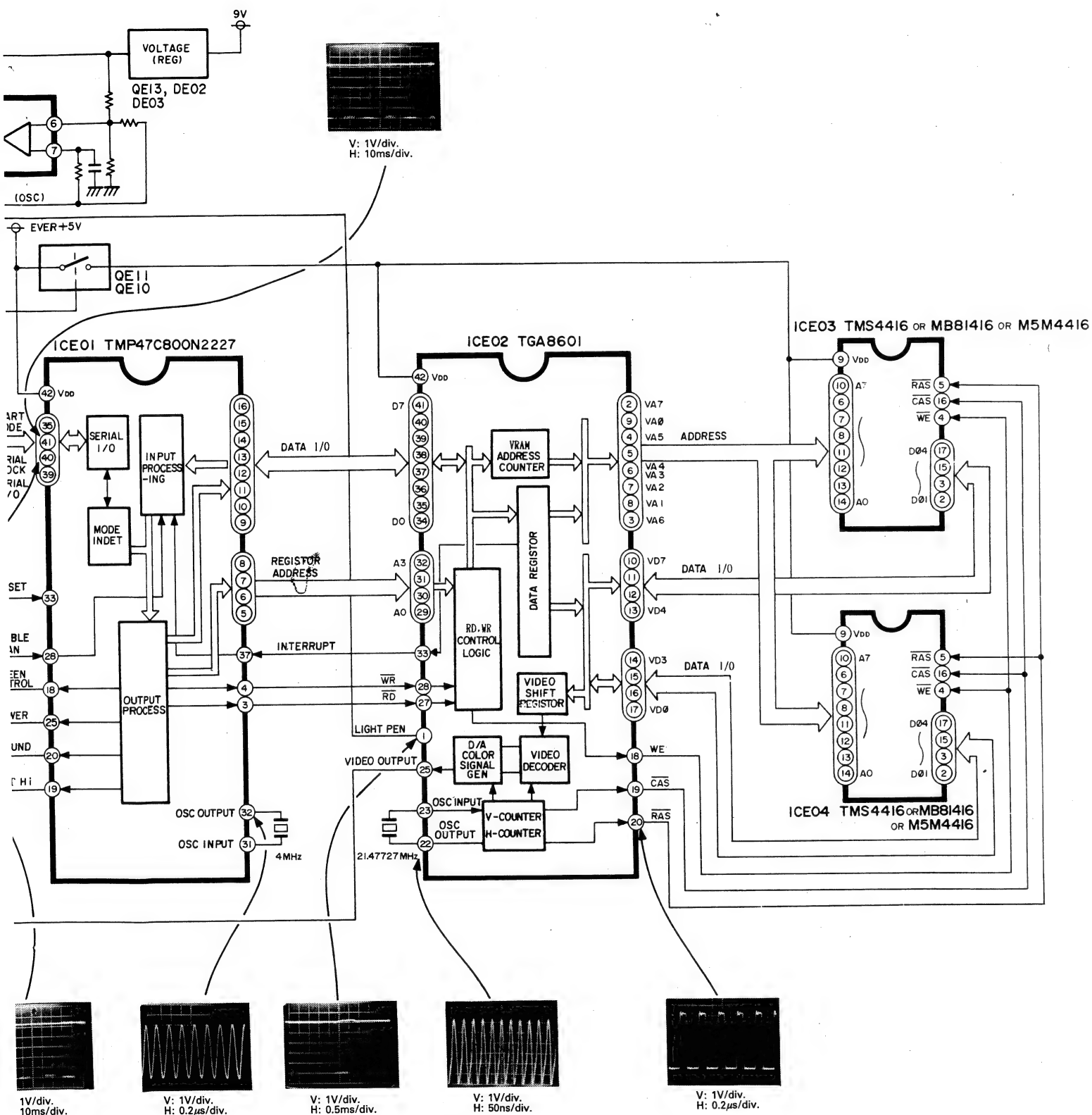
ICE01 TMP47C800N2227  
GRAPHIC TIMER MICROCOMPUTER



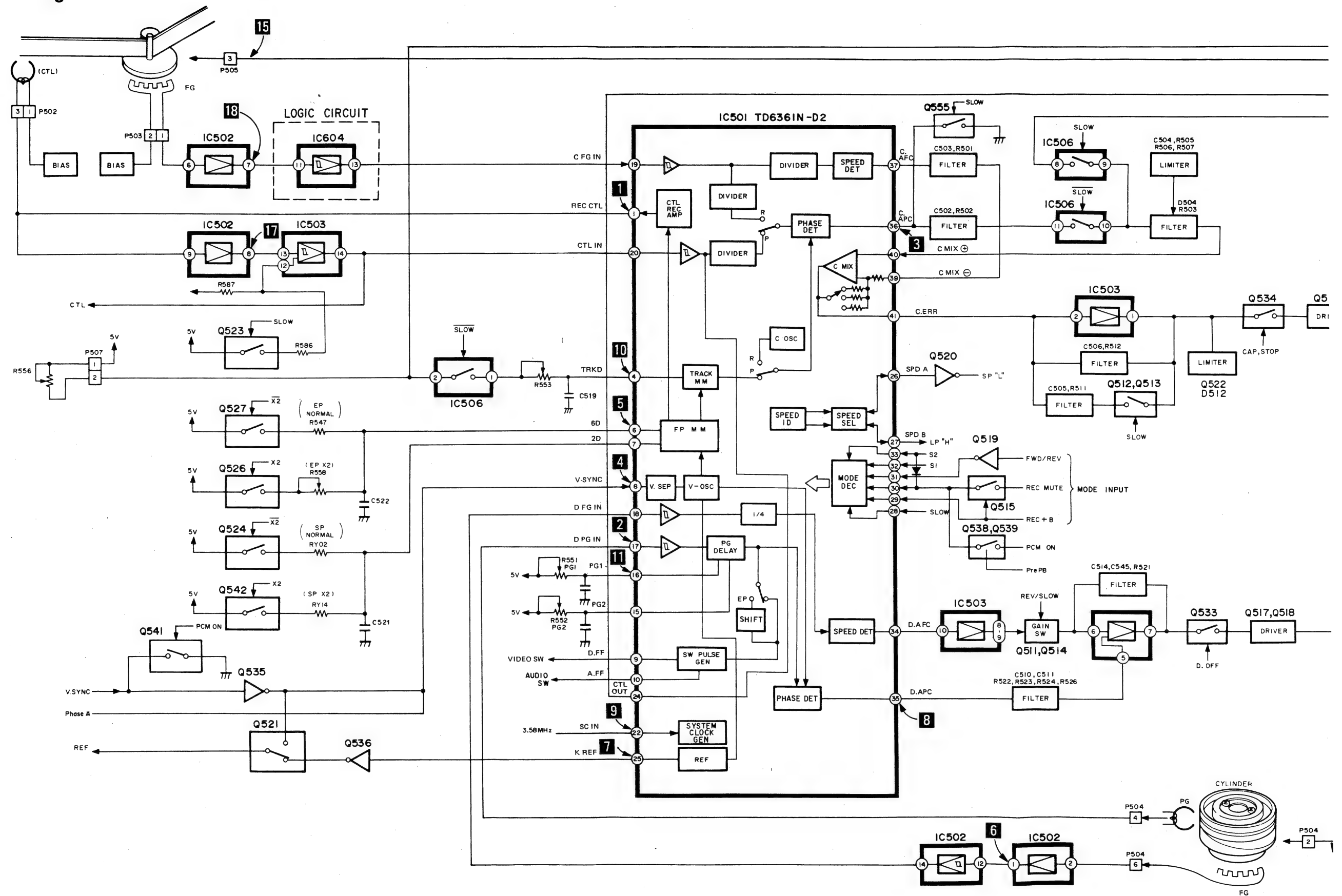


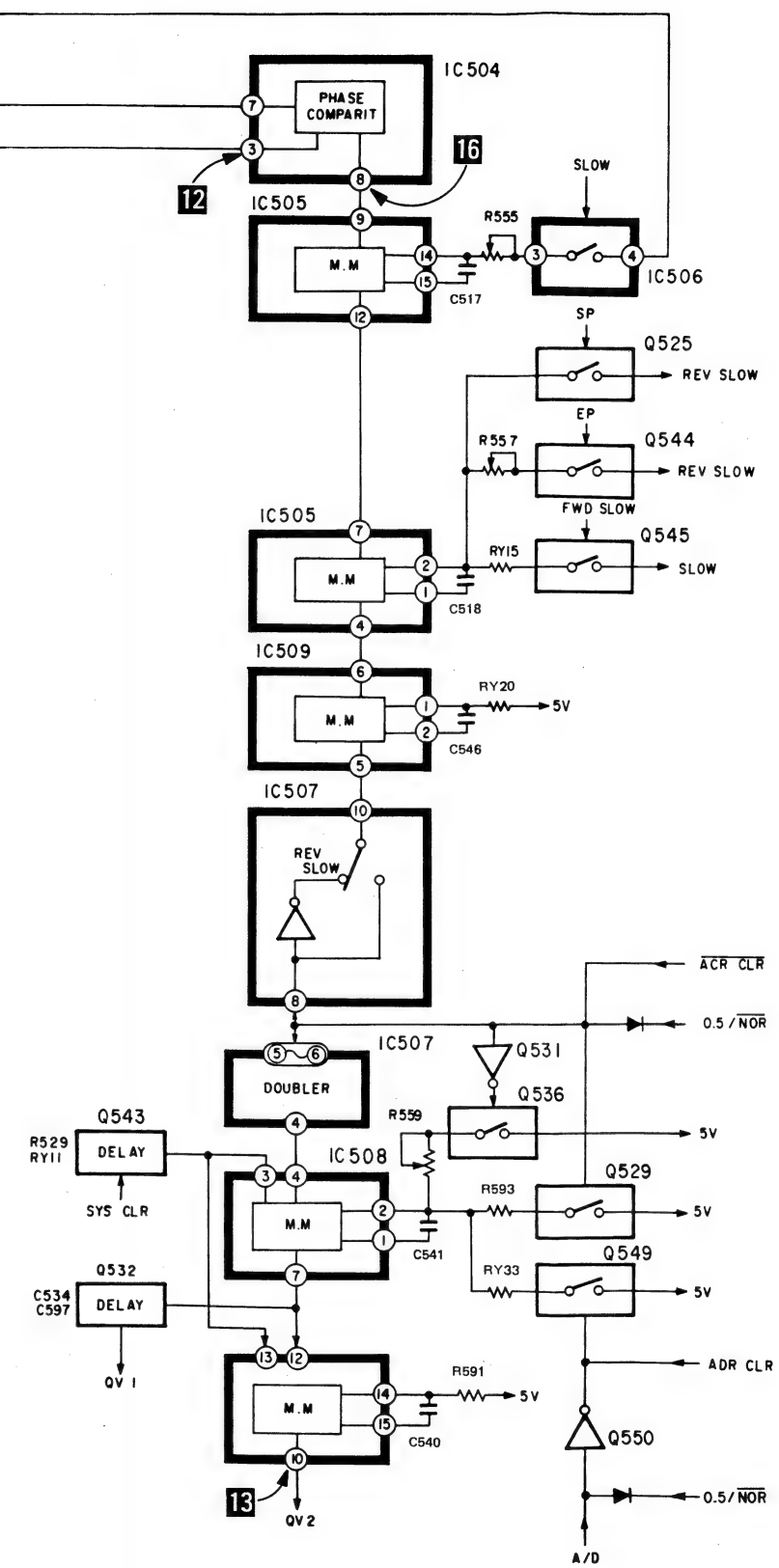
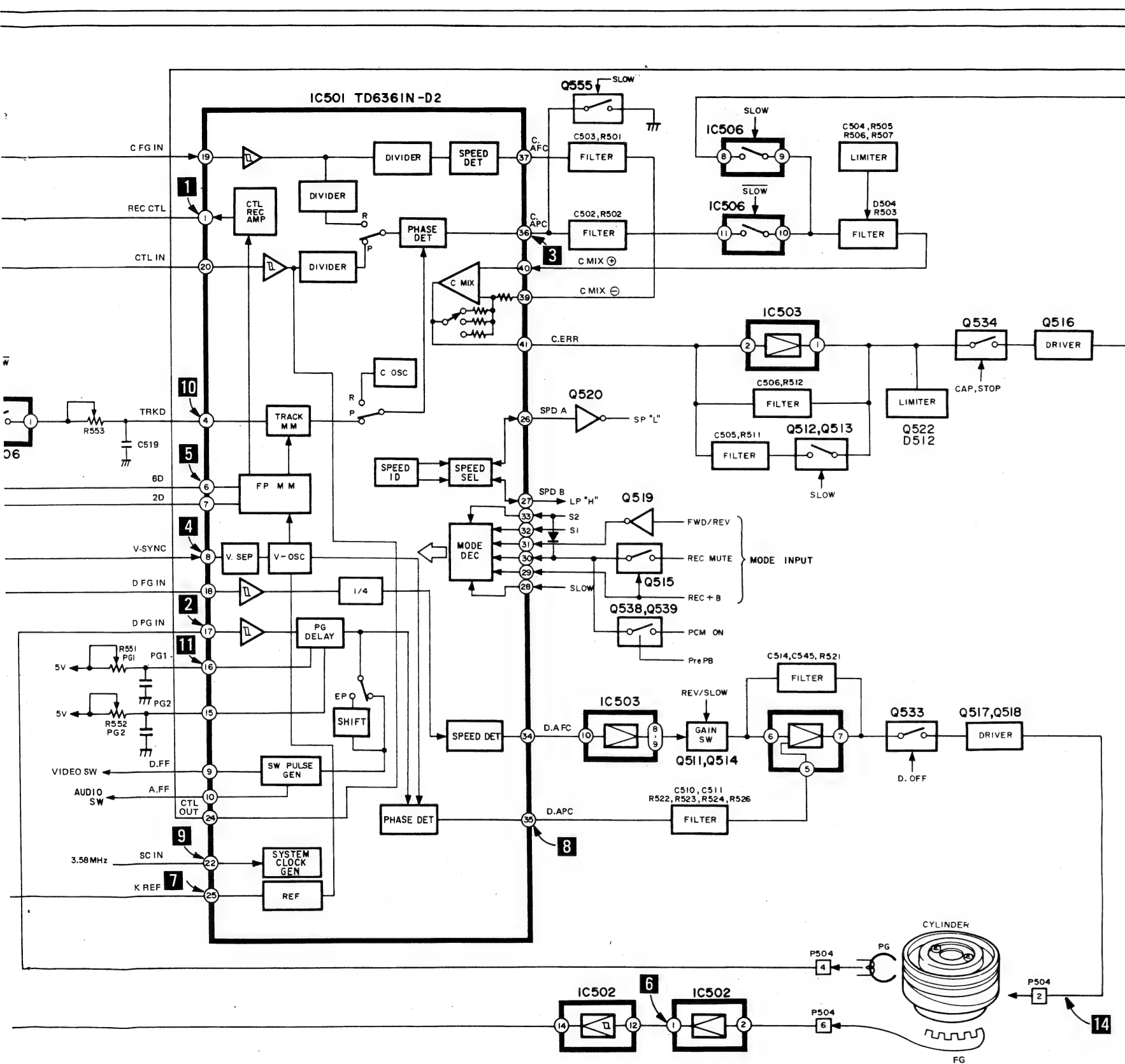




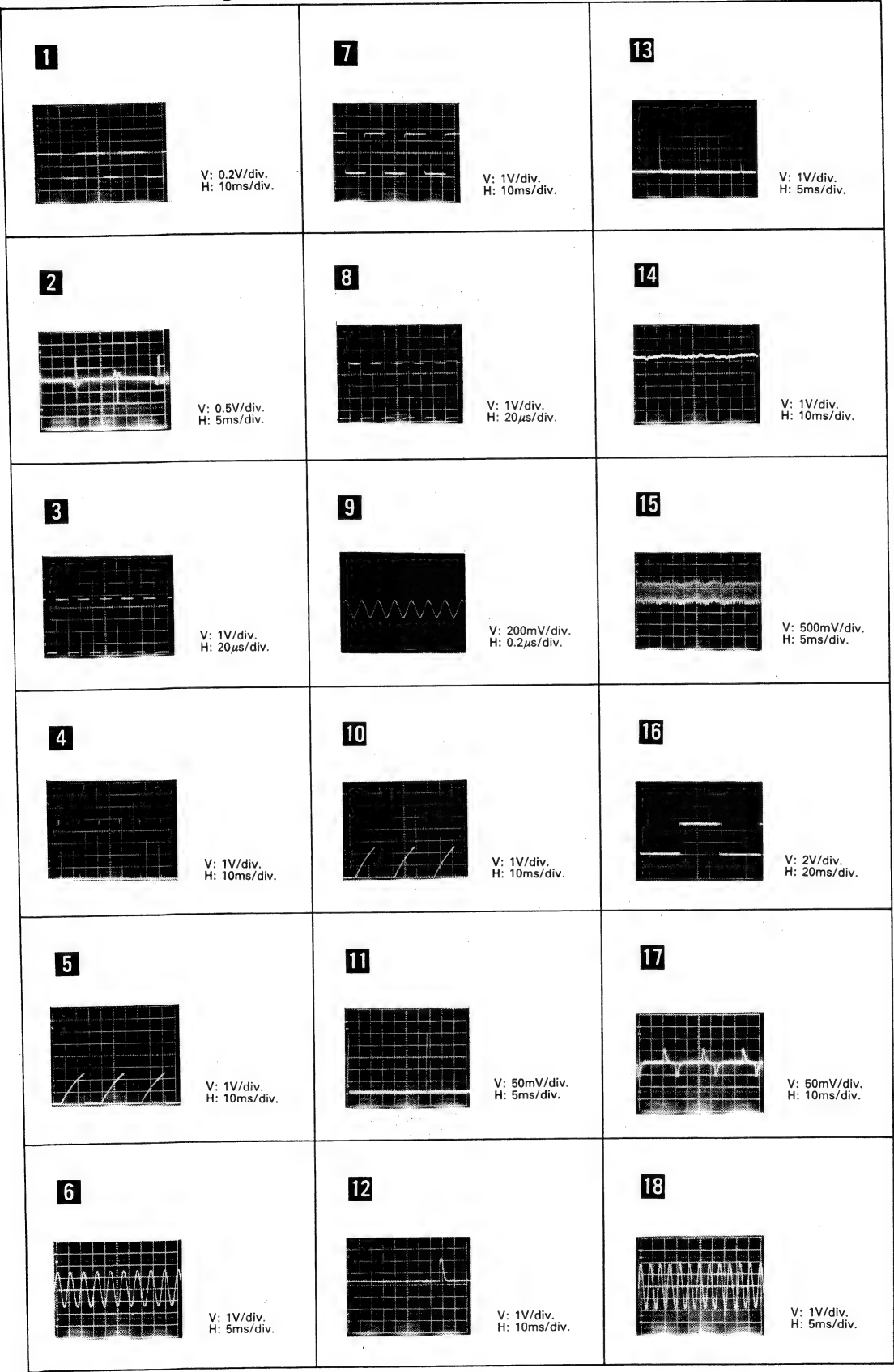


# 12-1. Servo Block Diagram





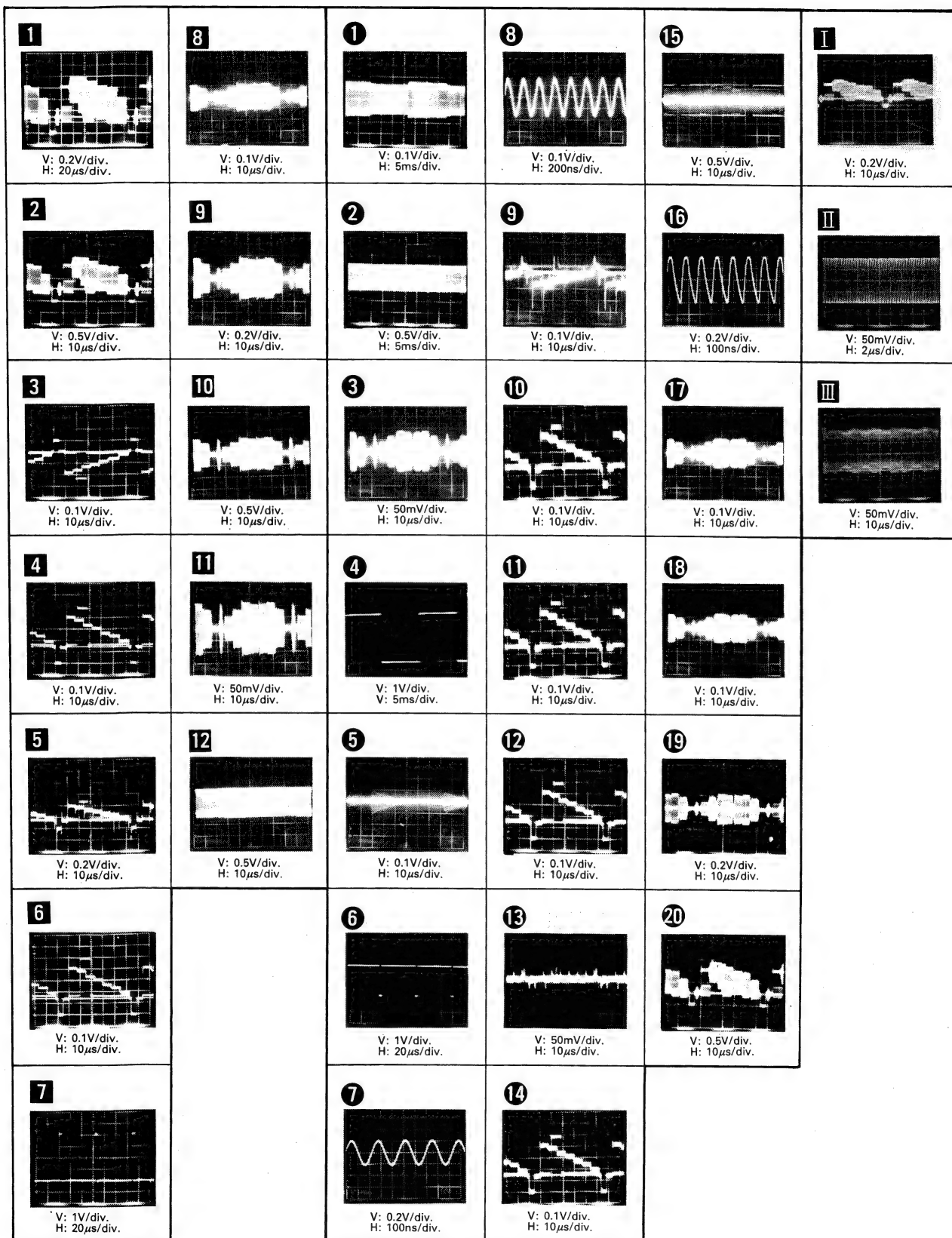
Servo Block Diagram (Waveforms)



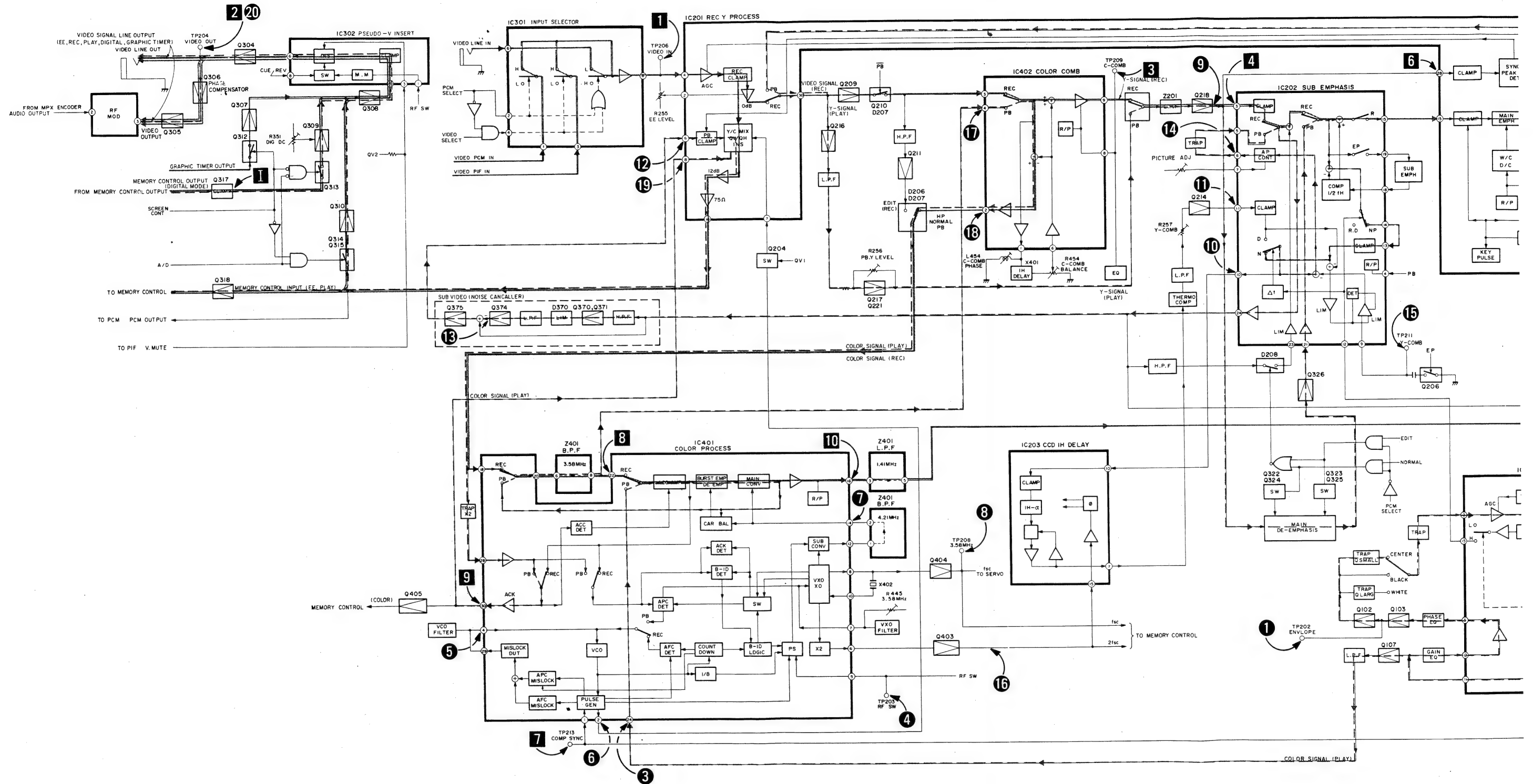
# Video Block Diagram (Waveforms)

Record Mode

Playback Mode



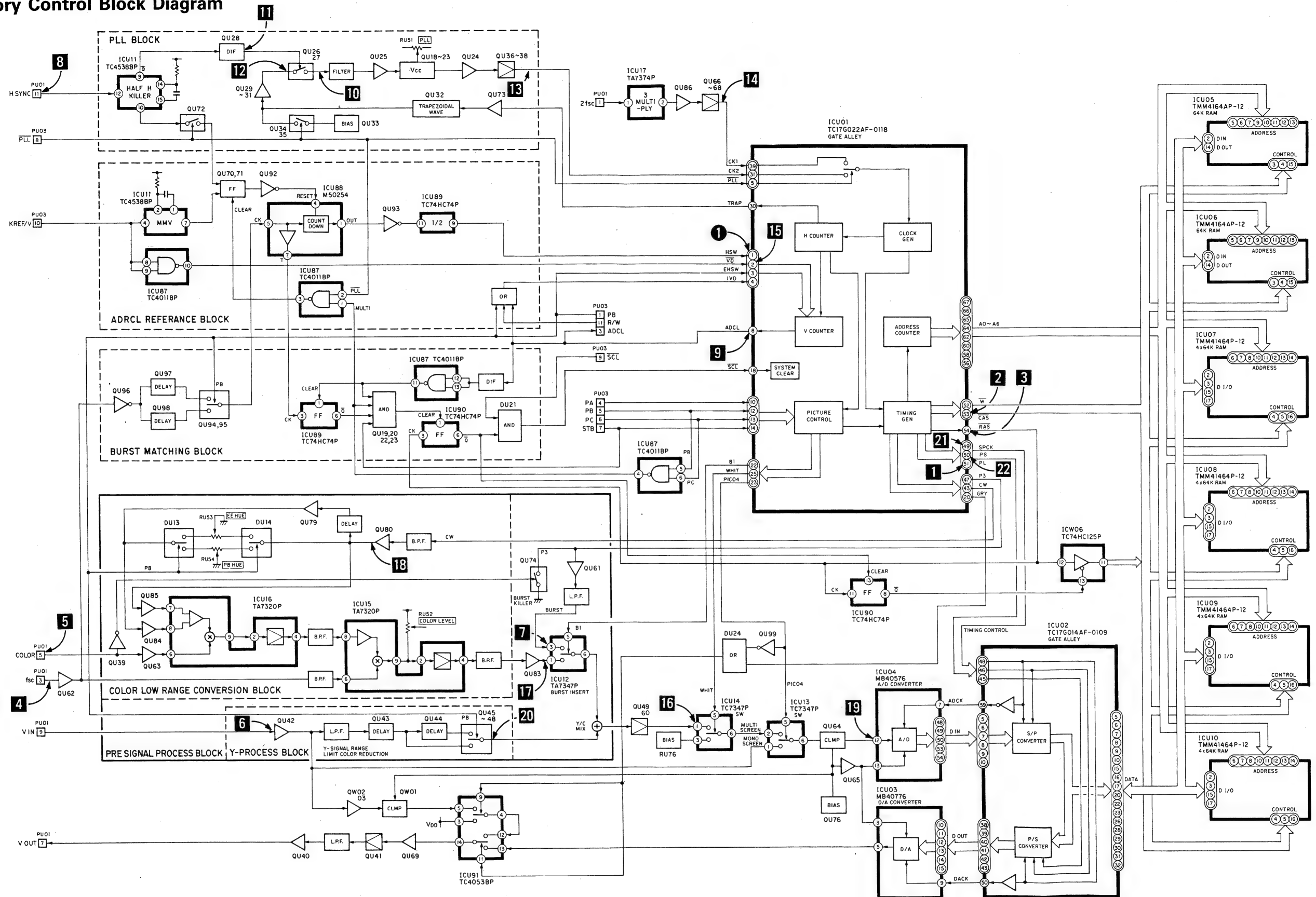
## 13-1. Video Block Diagram

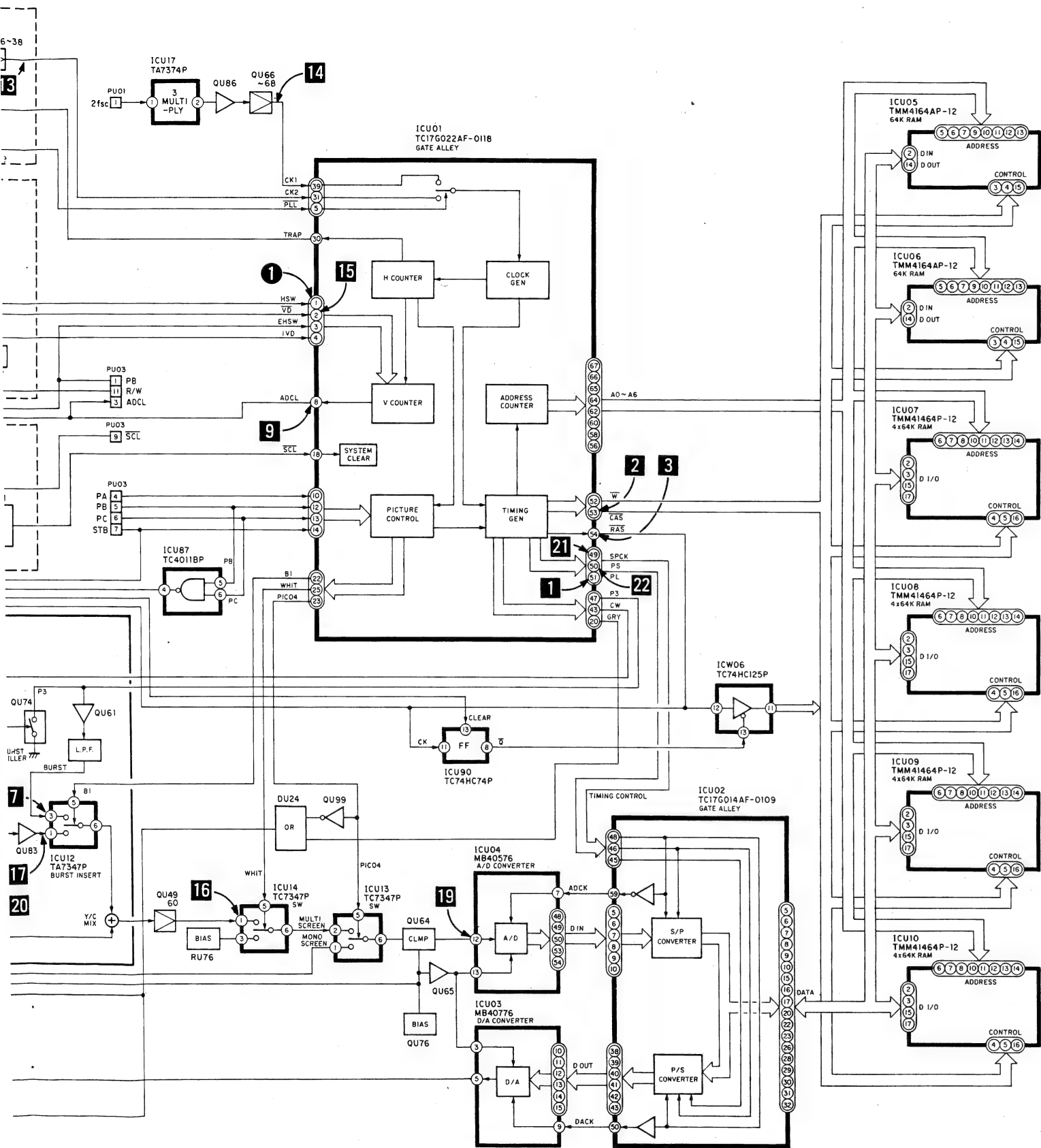






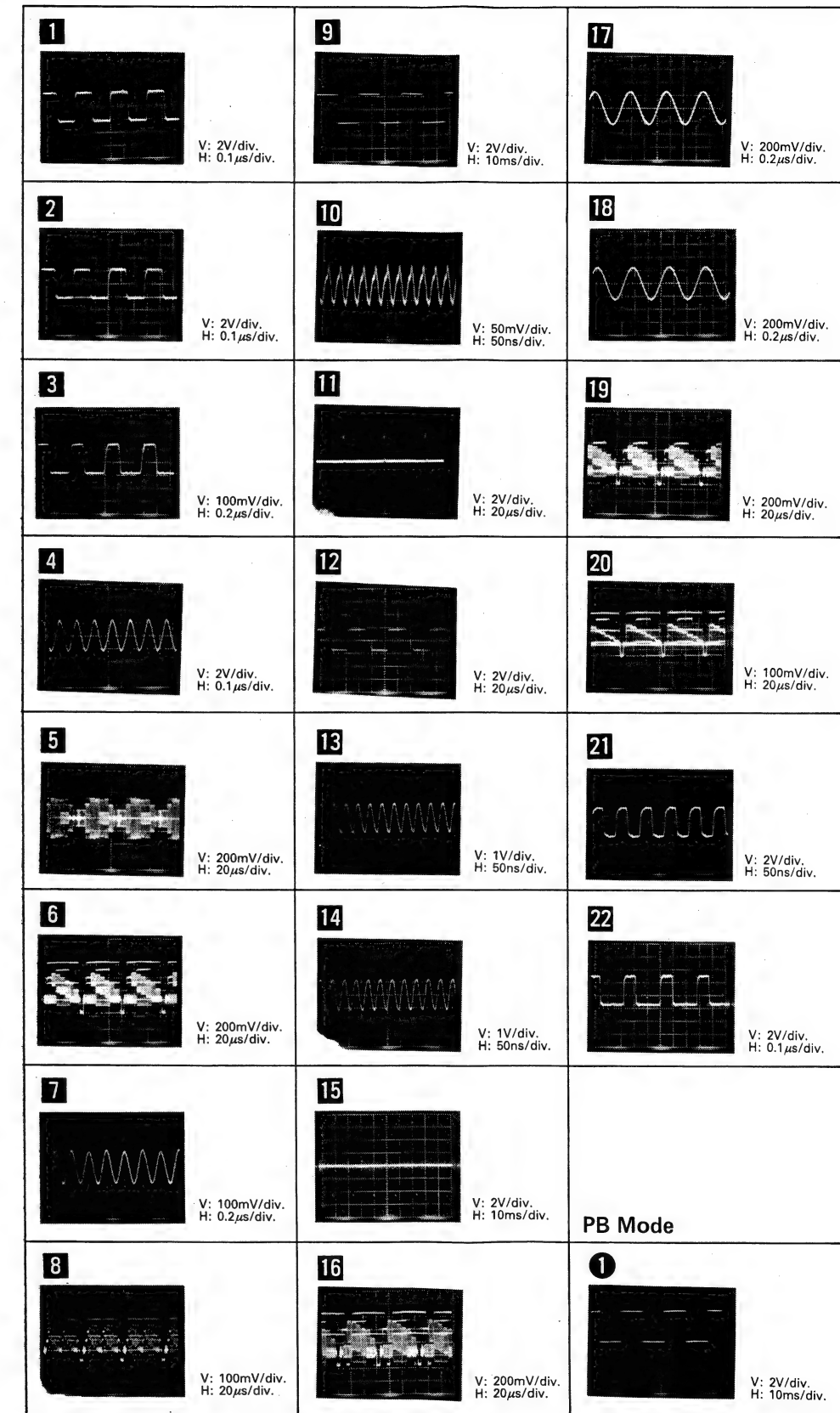
# 14-1. Memory Control Block Diagram





## Memory Control Block Diagram (Waveforms)

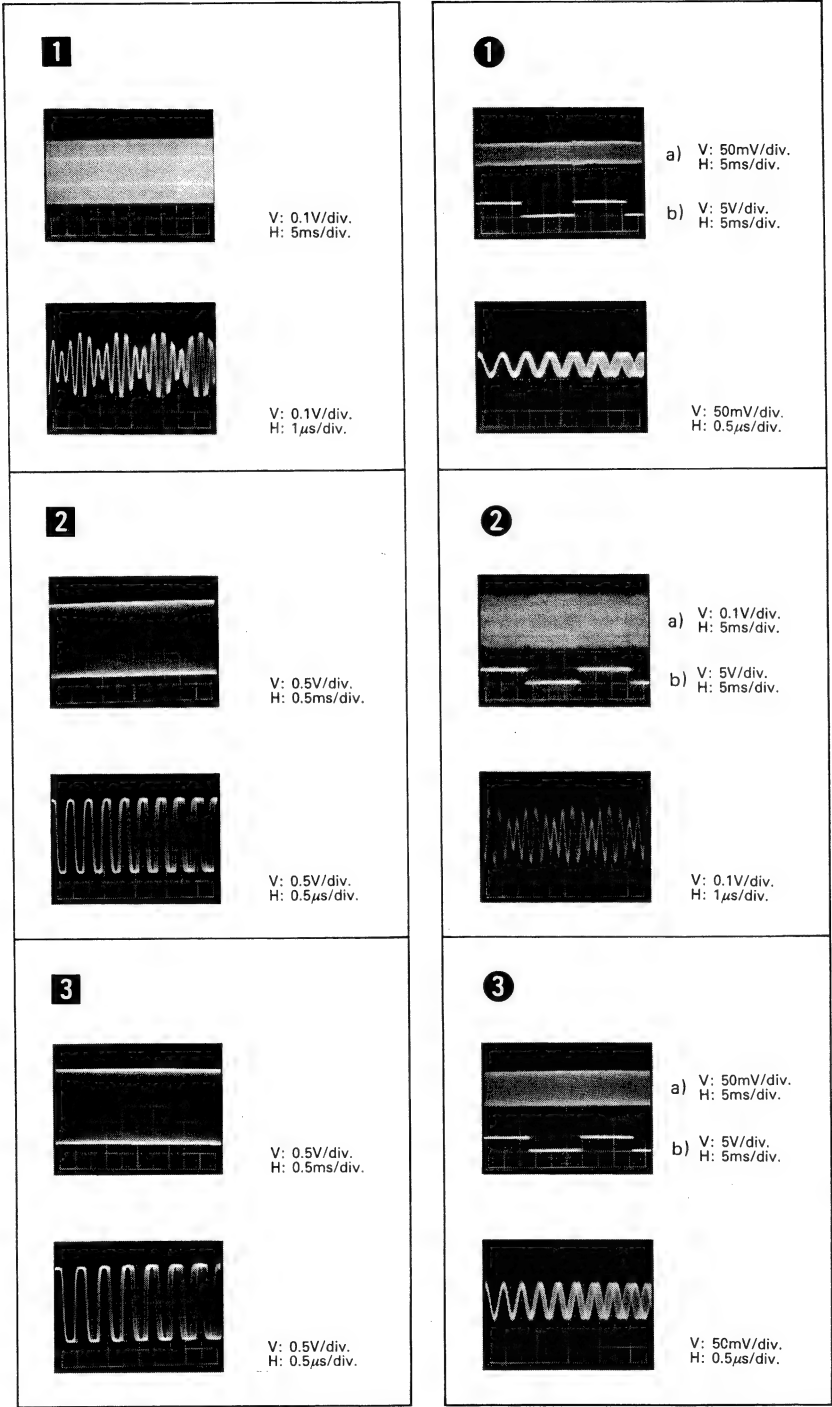
### Multi Scan



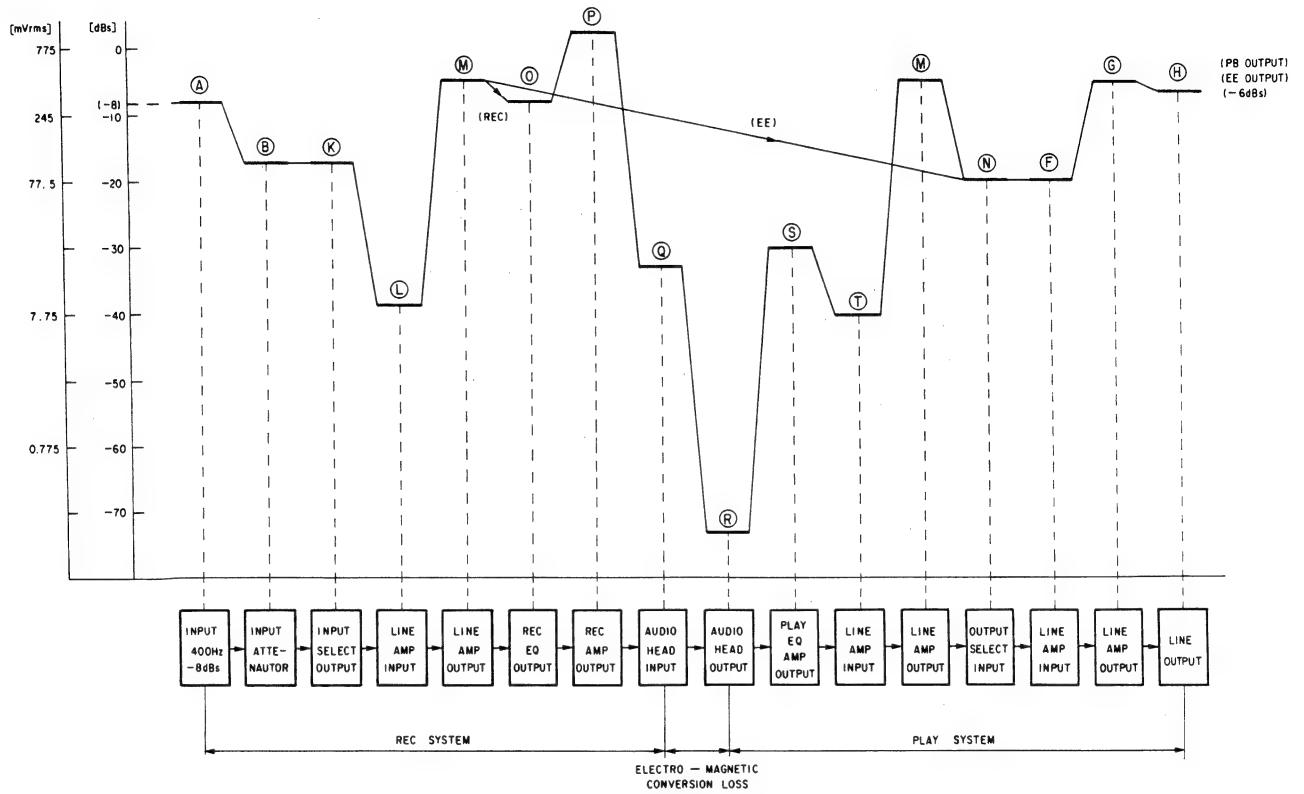
Audio Block Diagram (Waveforms)

Record Mode

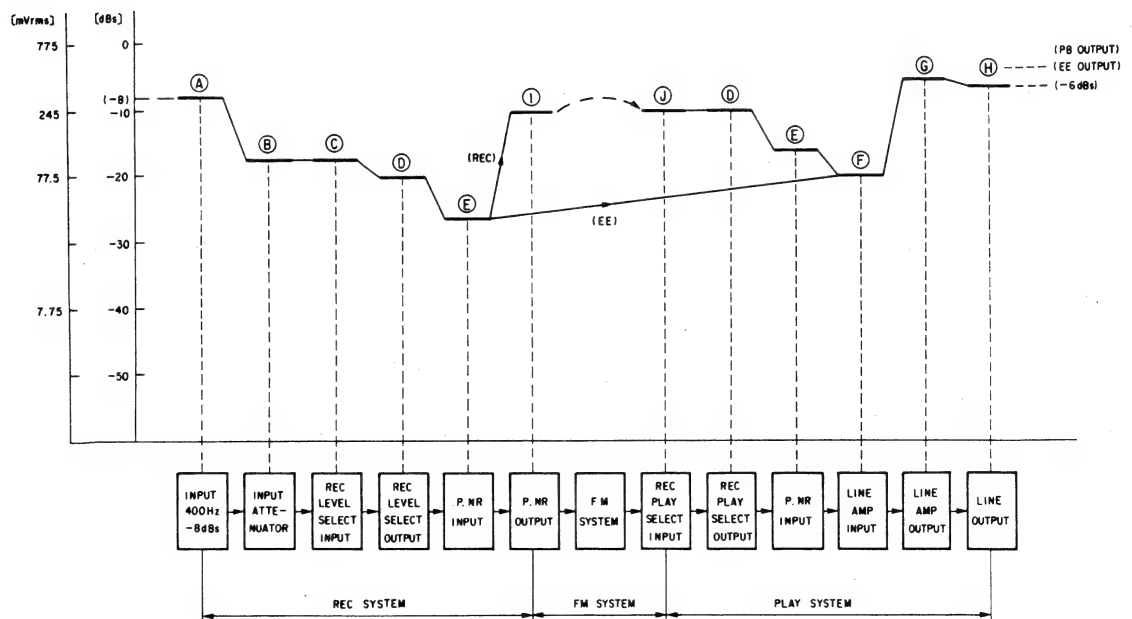
Playback Mode



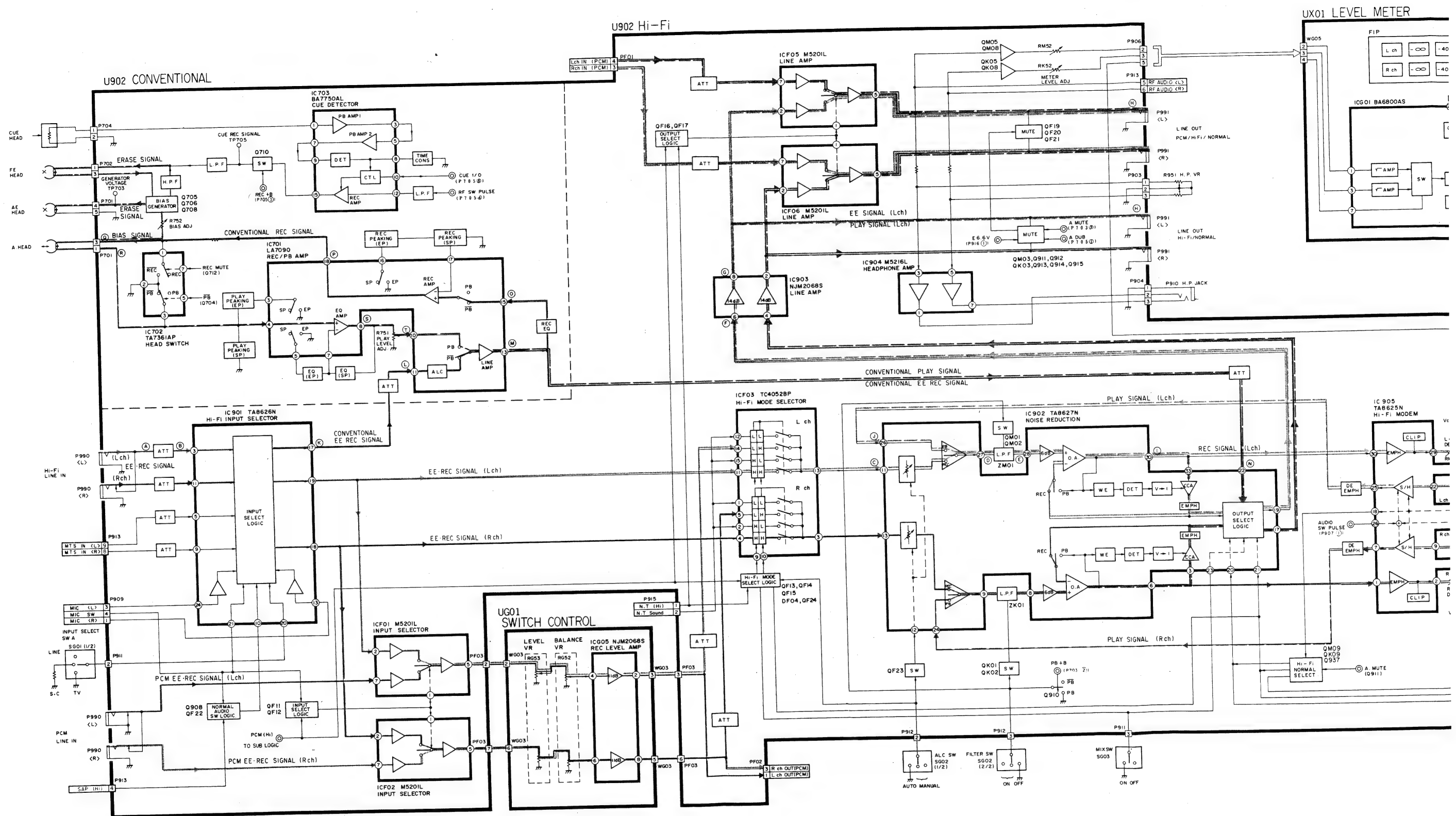
CONVENTIONAL LEVEL CHART



HI-FI LEVEL CHART

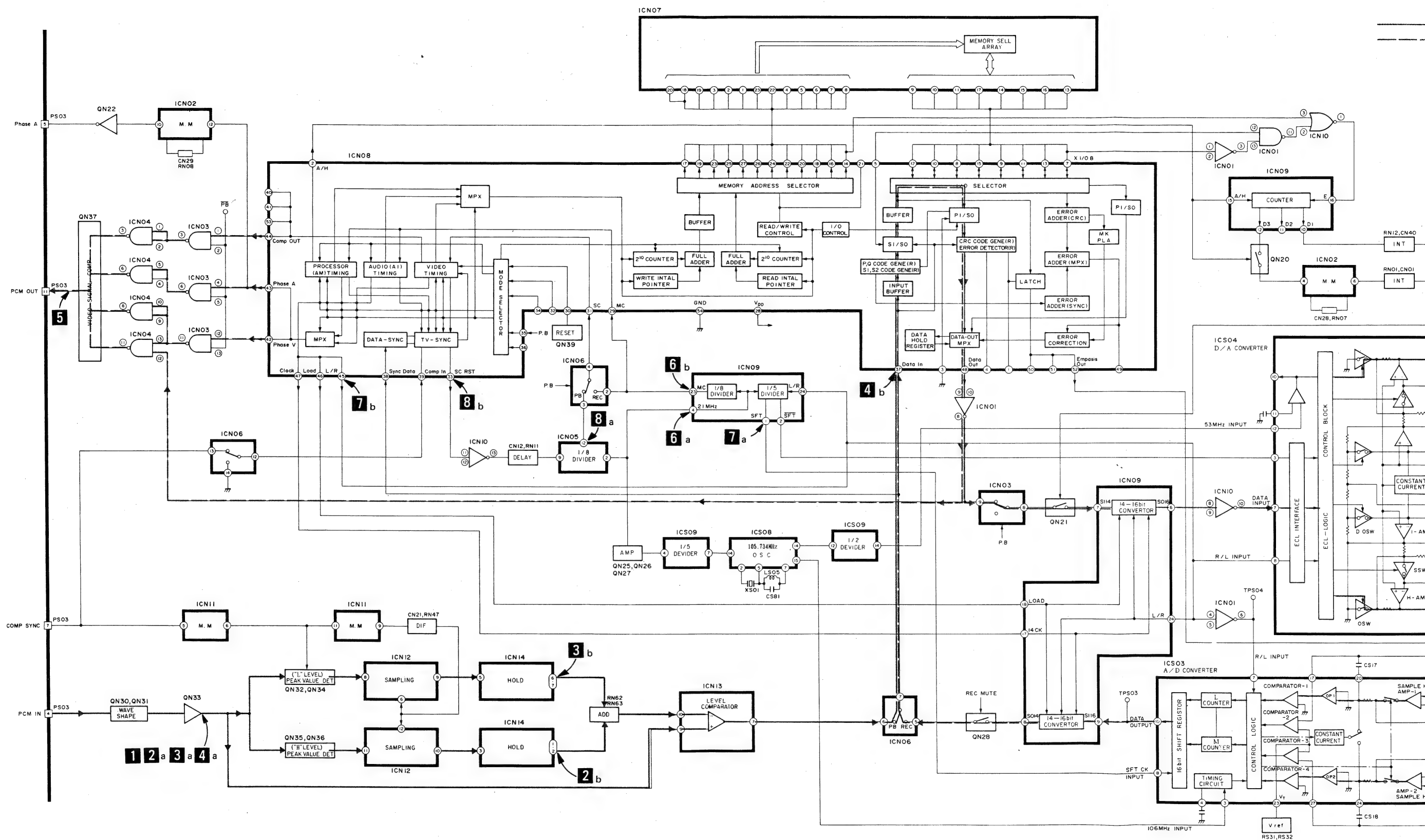


# 15-1. Audio Block Diagram



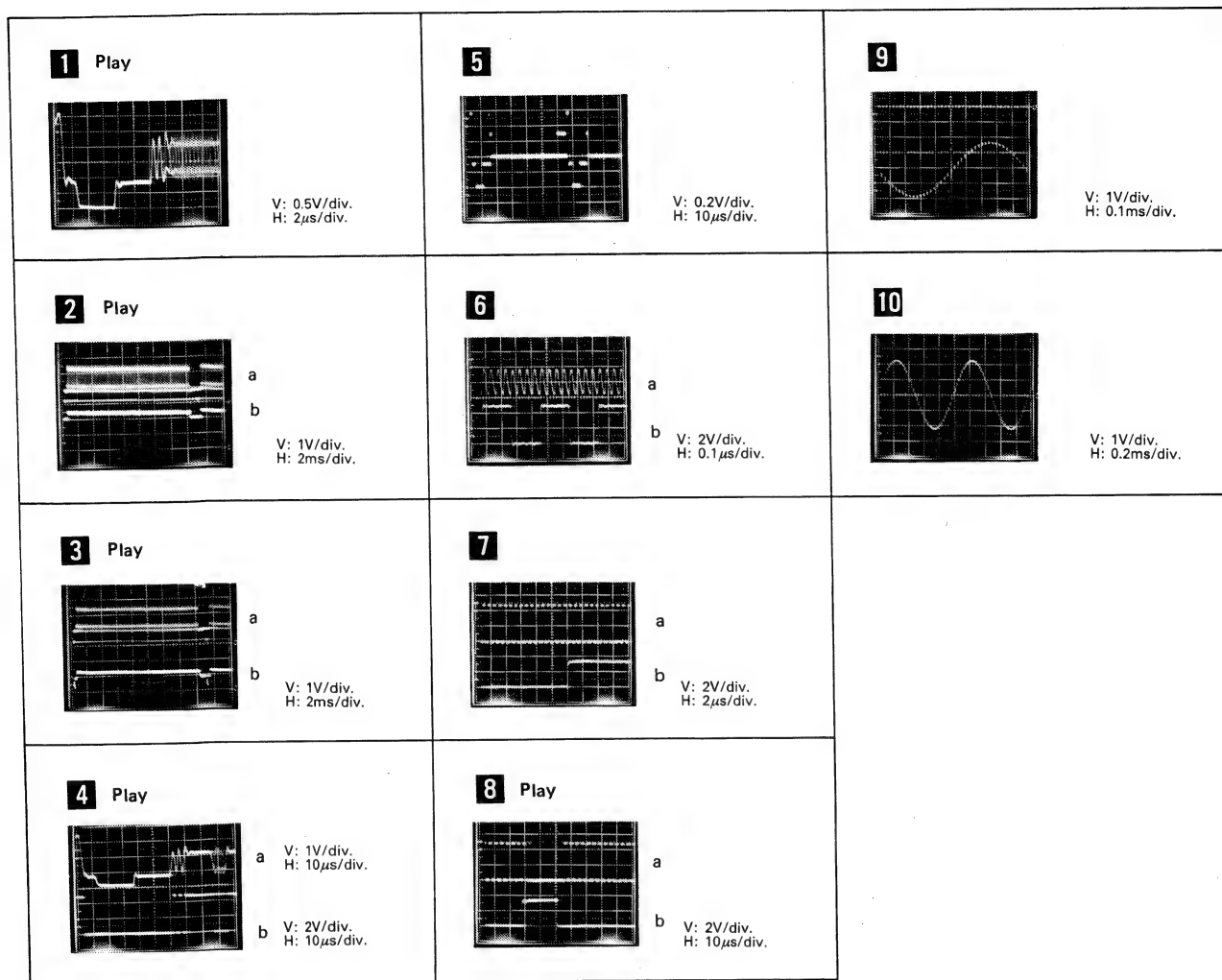


### 17-1. PCM Block Diagram









## 17-2. PCM Microcomputer Data

ICN08 TMS3475BNL

### (1) Memory interface

| Signal Name        | Pin No.                  | Input/Output | Functions                                                                                                      |
|--------------------|--------------------------|--------------|----------------------------------------------------------------------------------------------------------------|
| A0 - A9            | 16<br>18 - 20<br>22 - 27 | Output       | A0 - A9 and AS constitute 11-bit memory address bus.                                                           |
| AS                 | 14                       | Output       | Lowest address bit<br>Addressing of upper 7 bits data at "H".<br>Addressing of lower 7 bits data at "L".       |
| X WRITE            | 21                       | Output       | Active "L".<br>Memory write-in signal.                                                                         |
| X I/O1 -<br>X I/O7 | 8 - 13<br>15             | I/O          | 7-bit memory data bus.                                                                                         |
| X I/O8             | 7                        | I/O          | Error information bit added to word by word error decision of CRCC at PLAY mode.<br>Error is displayed at "L". |
| X C/S              | 17                       | Output       | Active "L"<br>Memory select signal.<br>Access of address control data at "H".                                  |

## (2) Data monitor

| Signal Name                         | Pin No. | Input/<br>Output | Functions                                                                                                                                                                 |
|-------------------------------------|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CONTROL<br>DATA ERROR               | 1       | Output           | Active "H"<br>Outputs control data latch pulse at PLAY mode when control data has no error.<br>"L" at REC mode.                                                           |
| A/H                                 | 2       | Output           | Active "H"<br>Framing signal output every six words of A/D and D/A 14-bit input/output data.<br>Develops frequency of MC frequency/180.                                   |
| X ADDRESS<br>CONTROL IN             | 4       | Input            | Inputs address control data to serial at REC mode.                                                                                                                        |
| FETCH                               | 5       | Output           | Active "H"<br>Memory read-out data strobe signal.                                                                                                                         |
| PREVIOUS<br>DATA HOLD<br>INDICATION | 49      | Output           | Active "H"<br>When 3 words or more error exist for 1H in PLAY mode, correction is impossible and previous value is replaced.<br>Thus indicating the process is performed. |
| Q-INHIBITS                          | 50      | Output           | Outputs Q-inhibit signal of control signal at PLAY mode. ("L" is output when Q can be corrected.)<br>Error is corrected only by P code at "L".                            |
| X DUBBING                           | 51      | Output           | Outputs dubbing inhibit code of control signal at PLAY mode.<br>Dubbing can be made at "L".                                                                               |
| X EMPHASIS<br>OUT                   | 52      | Output           | Outputs preemphasis identification code of control signal at PLAY mode.<br>Emphasis is used at "L".                                                                       |
| C GATE                              | 53      | Output           | Active "H"<br>Outputs control data signal time and field output period "H".                                                                                               |

## (3) Sync/Clock

| Signal Name          | Pin No. | Input/<br>Output | Functions                                                                                                            |
|----------------------|---------|------------------|----------------------------------------------------------------------------------------------------------------------|
| MC                   | 29      | Input            | Master clock input<br>Inputs clock to control data process and input/output timing except timings on VCR.            |
| SC                   | 31      | Input            | Sub clock input<br>Inputs clock to control timing on VCR and CRCC circuit.                                           |
| SCRST                | 33      | Output           | Active "H"<br>Outputs to initialize SC phase every 1H at PLAY mode.<br>"L" at REC mode.                              |
| COMP IN              | 39      | Input            | Inputs composite sync signal at PLAY mode.                                                                           |
| CRCC GATE<br>PULSE   | 40      | Output           | Active "H"<br>Outputs signal to display CRCC at PLAY mode.                                                           |
| ODD/X EVEN           | 41      | Output           | Outputs signal to display odd/even field of video signal.<br>"L": Even field<br>"H": Odd field                       |
| PHASE V<br>(WHITE)   | 42      | Output           | Outputs WHITE signal at REC mode.<br>Outputs MC, SC PLL control signal based on horizontal sync signal at PLAY mode. |
| PHASE A<br>(PED OUT) | 43      | Output           | Outputs PEDESTAL signal at REC mode.<br>Outputs MC, SC PLL control signal generated by dividing MC at PLAY mode.     |
| X COMP OUT           | 44      | Output           | Outputs composite sync signal at REC mode.<br>"L" at PLAY mode.                                                      |

(4) Data transmission, A/D, D/A control

| Signal Name | Pin No. | Input/<br>Output | Functions                                                                                                    |
|-------------|---------|------------------|--------------------------------------------------------------------------------------------------------------|
| DATA IN     | 37      | Input            | Data input pin<br>Inputs data from A/D at REC mode.<br>Inputs data of video signal at PLAY mode.             |
| SYNC DATA   | 38      | Input            | Inputs data sync signal at PLAY mode.                                                                        |
| L/R         | 45      | Output           | Lch and Rch selection signal of A/D, D/A.<br>REC mode: R at "H", L at "L".<br>PLAY mode: L at "H", R at "L". |
| LOAD        | 46      | Output           | A/D conversion start signal at REC mode.<br>D/A load signal at PLAY mode.                                    |
| CLOCK       | 47      | Output           | A/D, D/A data transmission clock.                                                                            |
| DATA OUT    | 48      | Output           | Outputs video signal data at REC mode.<br>Outputs data for D/A at PLAY mode.                                 |
| EMPHASIS IN | 3       | Input            | Inputs preemphasis identification code of control<br>signal at REC mode.<br>Fixed "L" at PLAY mode.          |
| X INT       | 30      | Input            | Active "L"<br>Inputs memory address initialization.                                                          |
| X TEST      | 32      | Input            | Inputs test mode selection.                                                                                  |
| PAL/X NTSC  | 34      | Input            | Inputs PAL/NTSC selection.<br>PAL at "H".<br>NTSC at "L".                                                    |
| X REC/PB    | 35      | Input            | Inputs REC/PLAY mode selection.<br>REC at "L".<br>PLAY at "H".                                               |
| TV/X ST     | 36      | Input            | Inputs TV/STATIONARY mode selection.<br>STATIONARY mode at "L".                                              |
| VDD         | 28      | Input            | +5V Power Supply                                                                                             |
| VSS         | 54      | Input            | GND                                                                                                          |
| NC          | 6       |                  | NC                                                                                                           |

# ICN09 TGA8502P

## Terminal function

| Pin No. | Name     | Input/<br>Output | Functions                                                                                   |
|---------|----------|------------------|---------------------------------------------------------------------------------------------|
| 1       | SFT      | Output           | Outputs 1/480 divided signal of pin 4 clock input<br>Same phase for pin 24 input 16-bit CK. |
| 2       | SFT      | Output           | Reverse to pin 1 output                                                                     |
| 3       | GND      |                  | GND                                                                                         |
| 4       | CK21     | Input            | 21 MHz CK input                                                                             |
| 5       | GND      |                  | GND                                                                                         |
| 6       | S016     | Output           | Outputs 16-bit conversion signal of pin 7 serial<br>14-bit data input                       |
| 7       | S114     | Input            | Inputs serial 14-bit data                                                                   |
| 8       | S014     | Output           | Outputs 14-bit conversion signal of pin 9 serial<br>16-bit data output                      |
| 9       | S116     | Input            | Input serial 16-bit data                                                                    |
| 10      | D1       | Output           | Error detection ("H" when finding 1 word or more<br>error in 6 words.)                      |
| 11      | D2       | Output           | Error detection ("H" when finding 2 words or more<br>errors in 6 words.)                    |
| 12      | D3       | Output           | Error detection ("H" when finding 3 words or more<br>errors in 6 words.)                    |
| 13      | DG1      | Output           | 10/16 pulse width of pin 24 "L" period                                                      |
| 14      | DG2      | Output           | 10/16 pulse width of pin 24 "H" period                                                      |
| 15      | A/H      | Input            | Inputs A/H signal for TMS3475BNL pin 2                                                      |
| 16      | E        | Input            | Inputs error signal                                                                         |
| 17      | CK14 bit | Input            | Inputs 14-bit clock                                                                         |
| 18      | Load     | Input            | Inputs load signal for TMS3475BNL pin 46                                                    |
| 19      | VCC      |                  | Power supply                                                                                |
| 20      | RST      |                  |                                                                                             |
| 21      |          |                  |                                                                                             |
| 22      |          |                  |                                                                                             |
| 23      | MC       | Output           | Outputs 1/8 divided signal of pin 4 21 MHz input                                            |
| 24      | L/R      | Input            | Inputs L/R signal for TMS3475BNL pin 45                                                     |

ICS03 TD6704P

Terminal function

| Pin No.     | Symbol         | Functions                                                                                                                                                                                                | Note |
|-------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1           | VCCE           | Plus power supply terminal for ECL logic section (5V)                                                                                                                                                    |      |
| 2           | VEEA           | Minus power supply terminal for analog section                                                                                                                                                           |      |
| 3<br>4<br>5 | XN<br>XO<br>XP | OSC terminal Minus input<br>Output<br>Plus input                                                                                                                                                         |      |
| 6           | VCCE           | Plus power supply terminal for ECL logic section (5V: Same as that of pin 1)                                                                                                                             |      |
| 7           | RL             | Rch/Lch conversion operation select signal input terminal<br>Lch input is sampled and held at rising edge and A/D converted for H level period.                                                          |      |
| 8           | SFT            | Shift clock input terminal to output converted digital data in serial                                                                                                                                    |      |
| 9           | GNDL           | Ground terminal for TTL logic section (GND)                                                                                                                                                              |      |
| 10          | DOUT           | Digital data output terminal<br>Data is synchronized with SFT falling to output from MSB.                                                                                                                |      |
| 11          | VDDL           | Plus power supply terminal for TTL logic section (5V)                                                                                                                                                    |      |
| 12          | GNDE           | Ground terminal for ECL logic section                                                                                                                                                                    |      |
| 13          | NC             | Open                                                                                                                                                                                                     |      |
| 14          | VEEA           | Minus power supply terminal for analog section                                                                                                                                                           |      |
| 15          | I ADJ          | Current ratio adjustment terminal                                                                                                                                                                        |      |
| 16          | VEEA           | Minus power supply terminal for analog section                                                                                                                                                           |      |
| 17          | AOUTL          | Lch integral amp output terminal<br>Integral capacitor is connected across input terminal.                                                                                                               |      |
| 18          | SINL           | Lch analog signal input terminal                                                                                                                                                                         |      |
| 19          | GNDA           | Ground terminal for analog section                                                                                                                                                                       |      |
| 20          | AINL           | Lch integral amp input terminal                                                                                                                                                                          |      |
| 21          | GNDS           | Analog signal ground terminal                                                                                                                                                                            |      |
| 22          | I REF          | Integral reference current input terminal (Ground potential)<br>Double integration of $I_M = 4 \cdot I_{ref}$ , $I_L = 1/32 \cdot I_{ref}$ is performed, where $I_{ref}$ is a current flowing into IREF. |      |
| 23          | VT             | Comparator reference voltage input terminal<br>When integrator output matches to VT, integral current is switched from $I_M$ to $I_L$ .                                                                  |      |
| 24          | AINR           | Rch integral amp input terminal                                                                                                                                                                          |      |
| 25          | GNDA           | Ground terminal for analog section                                                                                                                                                                       |      |
| 26          | SINR           | Rch analog signal input terminal                                                                                                                                                                         |      |
| 27          | AOUTR          | Rch integral amp output terminal<br>Integral capacitor is connected across input terminal.                                                                                                               |      |
| 28          | VCCA           | Plus power supply terminal for analog section                                                                                                                                                            |      |

ICS04 TD6709N

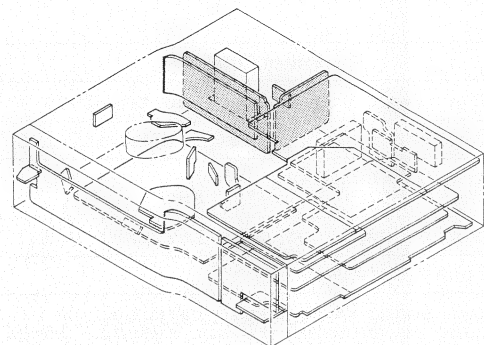
Terminal function

| Pin No.        | Symbol         | Functions                                                                                                                                            | Note |
|----------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1              | VCCA           | Analog plus power supply voltage terminal (+5V)                                                                                                      |      |
| 2              | VCCE           | ECL logic power supply voltage terminal (+5V)                                                                                                        |      |
| 3              | BCK            | Bit clock input terminal<br>Duty cycle = 50%, $f = 1.4112$ MHz                                                                                       |      |
| 4              | VCCD           | Digital power supply voltage terminal (+5V)                                                                                                          |      |
| 5, 6           | NC             | Not connected terminal                                                                                                                               |      |
| 7              | DATA           | PCM digital audio data input terminal<br>Input should be entered in bit serial (16-bit unit) from MSB side in synchronization with BCK falling edge. |      |
| 8              | LRCK           | Input data Lch/Rch indication signal input terminal<br>Input should be entered in synchronization with BCK falling edge.                             |      |
| 9              | GND            | Ground terminal                                                                                                                                      |      |
| 10<br>11<br>12 | XO<br>XP<br>XN | OSC circuit I/O terminal<br>Constitutes a modified Colpitts oscillator by connecting L, C and R with SAW resonator or X'tal element.                 |      |
| 13             | VCCE           | ECL logic power supply voltage terminal (+5V)                                                                                                        |      |
| 14, 15         | VEEA           | Analog minus power supply voltage terminal (-5V)                                                                                                     |      |
| 16             | RSO            | Rch sample hold amp output terminal                                                                                                                  |      |
| 17             | RSI            | Rch sample hold amp minus input terminal                                                                                                             |      |
| 18             | OSR            | Rch output off-set adjustment terminal<br>Connected to GNDA normally.                                                                                |      |
| 19             | R10            | Rch integral amp output terminal                                                                                                                     |      |
| 20             | R11            | Rch integral amp minus input terminal                                                                                                                |      |
| 21             | VDC            | Discharge circuit reference voltage terminal                                                                                                         |      |
| 22             | I ADJ          | Current fine adjustment terminal<br>Connected to GNDA normally.                                                                                      |      |
| 23             | I REF          | Reference current input terminal                                                                                                                     |      |
| 24             | GNDS           | Ground terminal                                                                                                                                      |      |
| 25             | GNDA           | Analog ground terminal                                                                                                                               |      |
| 26             | LII            | Lch integral amp minus input terminal                                                                                                                |      |
| 27             | LIO            | Lch integral amp output terminal                                                                                                                     |      |
| 28             | OSL            | Lch output off-set adjustment terminal<br>Connected to GNDA normally.                                                                                |      |
| 29             | LSI            | Lch sample hold amp minus input terminal                                                                                                             |      |
| 30             | LSO            | Lch sample hold amp output terminal                                                                                                                  |      |



1 2 3 4 5 6 7 8 9 10 11

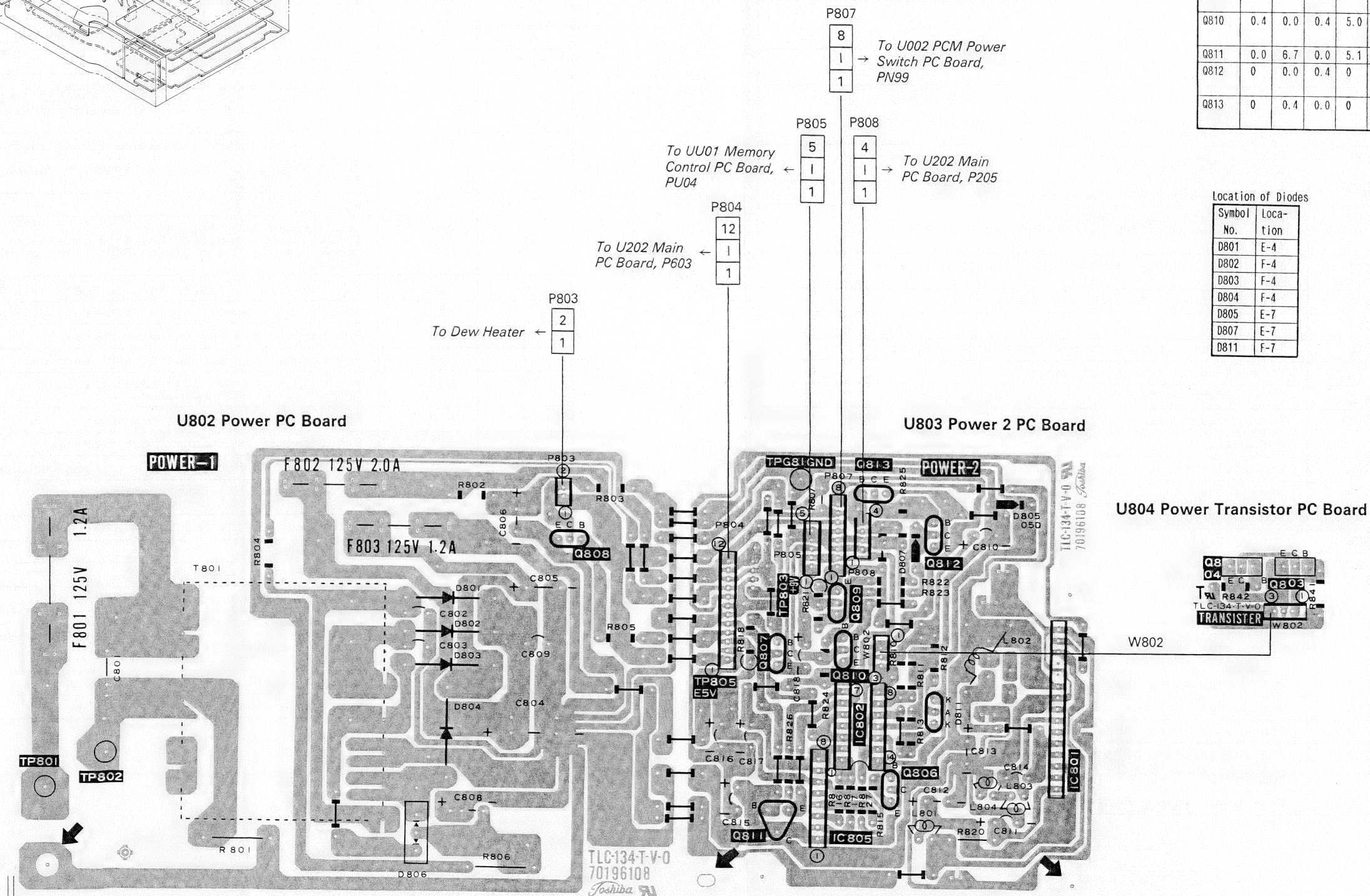
## 7-2. Power Supply PC Board



| Voltage Location of Transistor (V): PCM SW OFF |           |      |     |     |      |     |      |      |     |         |              |              | Loca-<br>tion |
|------------------------------------------------|-----------|------|-----|-----|------|-----|------|------|-----|---------|--------------|--------------|---------------|
| Symbol<br>No.                                  | POWER OFF |      |     | EE  |      |     | PLAY |      |     | PCM REC |              |              |               |
|                                                | E         | C    | B   | E   | C    | B   | E    | C    | B   | E       | C            | B            |               |
| Q803                                           | 0.0       | 19.1 | 0.5 | 9.1 | 17.2 | 9.7 | 9.1  | 16.9 | 9.7 | 9.1     | 16.7         | 9.7          | E-9           |
| Q804                                           | 0.0       | 19.1 | 0.5 | 9.1 | 17.2 | 9.7 | 9.1  | 16.9 | 9.7 | 9.1     | 16.7         | 9.7          | E-9           |
| Q806                                           | 5.8       | 6.7  | 6.4 | 5.7 | 6.7  | 6.3 | 5.7  | 6.6  | 6.2 | 5.7     | 6.6          | 6.3          | G-7           |
| Q807                                           | 0         | 0.0  | 5.6 | 0   | 5.1  | 0.2 | 0    | 5.0  | 0.2 | 0       | 5.0          | 0.2          | F-6           |
| Q808                                           | 0         | 0.8  | 1.3 | 0   | 0.8  | 1.3 | 0    | 16.9 | 0.1 | 0       | 16.8         | 0.1          | E-4           |
| Q809                                           | 0.0       | 0.0  | 0.0 | 9.1 | 9.1  | 8.3 | 9.1  | 9.1  | 8.3 | 9.1     | 0.1<br>(9.1) | 9.1<br>(8.3) | F-6           |
| Q810                                           | 0.4       | 0.0  | 0.4 | 5.0 | 5.0  | 4.3 | 5.0  | 5.0  | 4.3 | 5.0     | 0.1<br>(5.0) | 5.0<br>(4.3) | F-6           |
| Q811                                           | 0.0       | 6.7  | 0.0 | 5.1 | 6.7  | 5.6 | 5.0  | 6.6  | 5.6 | 5.0     | 6.6          | 5.5          | G-6           |
| Q812                                           | 0         | 0.0  | 0.4 | 0   | 0.1  | 0.8 | 0    | 0.1  | 0.8 | 0       | 9.1<br>(0)   | 0.0<br>(5.0) | E-7           |
| Q813                                           | 0         | 0.4  | 0.0 | 0   | 0.8  | 0.0 | 0    | 0.8  | 0.0 | 0       | 0.0<br>(5.0) | 7.7<br>(0)   | E-6           |

| Location of Diodes |          |
|--------------------|----------|
| Symbol No.         | Location |
| D801               | E-4      |
| D802               | F-4      |
| D803               | F-4      |
| D804               | F-4      |
| D805               | E-7      |
| D807               | E-7      |
| D811               | F-7      |

| Location of IC's |          |
|------------------|----------|
| Symbol No.       | Location |
| IC801            | G-8      |
| IC802            | F-6      |
| IC805            | G-6      |





### 7-3. Power Supply Circuit

A

B

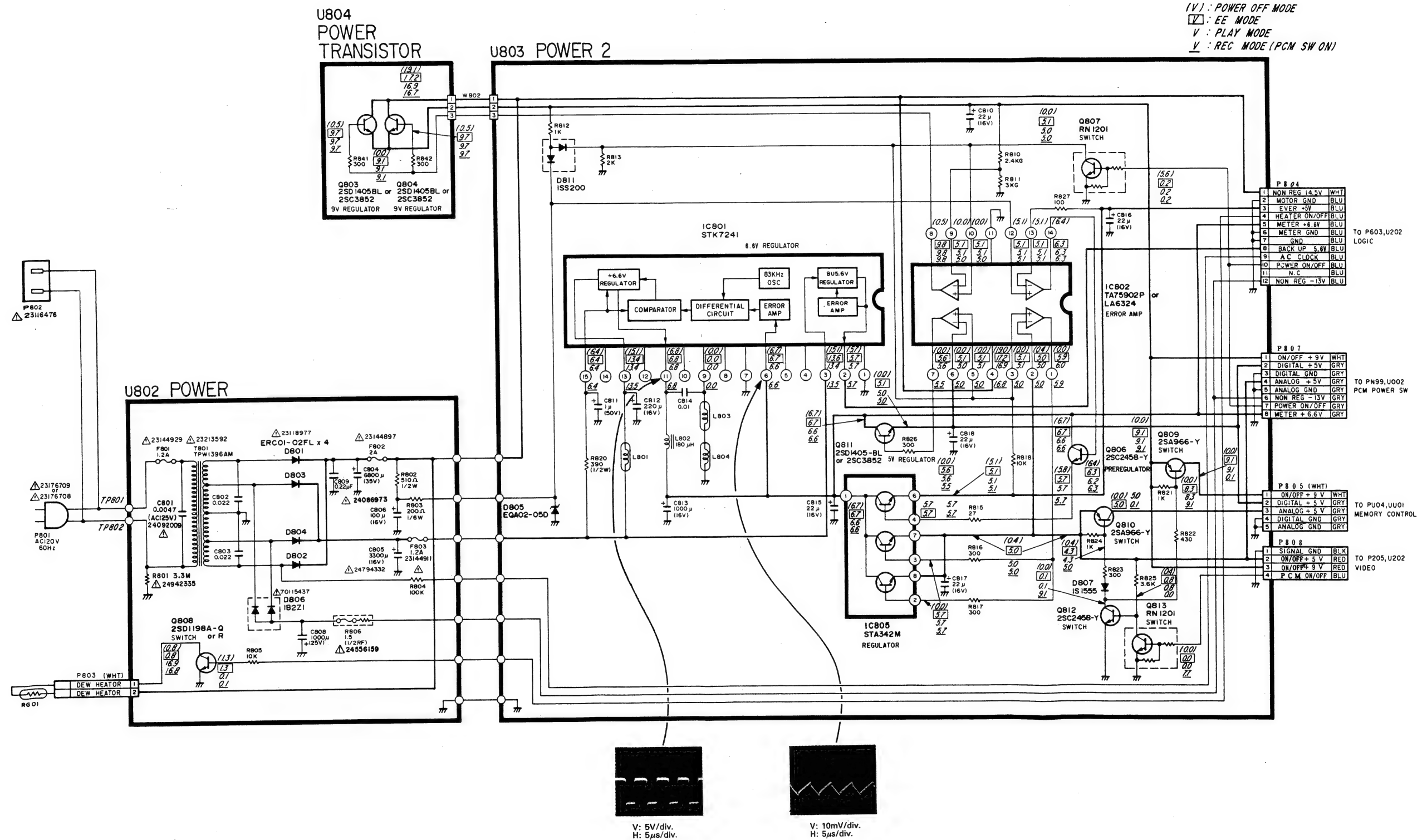
**C**

D

# E

**F**

## G



1

2

3

4

5

6

7

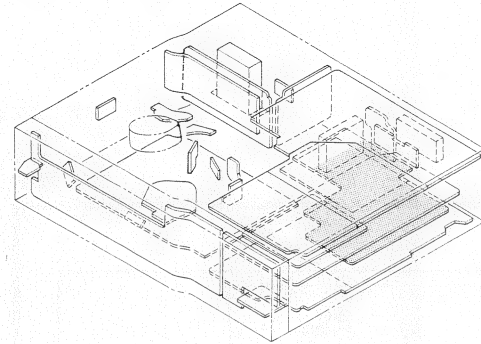
8

9

10

11

## 8-2. TV Receiving PC Board (Tuner, PIF, MTS)



Voltage and Location of Transistors

| Symbol No. | E   | C   | B    | Location |
|------------|-----|-----|------|----------|
| Q002       | 0.7 | 6.1 | 1.4  | D-2      |
| Q003       | 0.6 | 4.8 | 1.3  | E-9      |
| Q004       | 2.0 | 0   | 1.3  | C-7      |
| Q005       | 2.9 | 6.5 | 3.5  | E-9      |
| Q006       | 7.9 | 0.1 | 7.5  | B-11     |
| Q007       | 8.8 | 8.7 | 10.0 | C-11     |
| Q008       | 8.8 | 0   | 8.7  | C-11     |
| Q009       | 4.9 | 0.6 | 4.2  | C-11     |
| Q010       | 0   | 0   | 0.6  | C-11     |
| Q011       | 9.0 | 8.8 | 8.3  | E-7      |
| Q012       | 0   | 0   | 3.0  | E-8      |
| Q013       | 0   | 3.0 | 0    | E-8      |
| Q014       | 5.4 | 8.8 | 6.1  | C-9      |
| Q015       | 2.1 | 6.8 | 2.8  | D-7      |
| Q017       | 1.3 | 7.3 | 2.0  | C-7      |
| Q018       | 5.4 | 5.3 | 4.7  | E-7      |
| QA02       | 1.5 | 5.3 | 2.0  | D-11     |
| QA03       | 0.8 | 5.3 | 1.5  | E-11     |
| QA04       | 0   | —   | 0.6  | D-10     |
| QD01       | 0   | 4.1 | 0.7  | F-7      |
| QD62       | 5.3 | 0   | 5.3  | D-6      |
| QD71       | 5.3 | 0   | 5.3  | D-6      |
| QD72       | 0   | 5.3 | 0    | D-6      |
| QD73       | 2.6 | 6.0 | 3.3  | C-6      |
| QD99       | 0   | 9.0 | 0    | D-7      |
| QD64       | 0   | 0   | 0    | —        |

QA04 collector voltage varies from 1.1 to 26.5(V) depending on receiving ch.

Voltage and Location of Transistors

| Receiving mode | VL  |     |     | VH  |     |     | VS  |     |     | U   |     |     |      | Location |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|
| Transistor     | E   | C   | B   | E   | C   | B   | E   | C   | B   | E   | C   | B   |      |          |
| QA05           | 0   | 0   | 5.0 | 0   | 0   | 5.0 | 0   | 0   | 5.0 | 0   | 8.8 | 0   | B-9  |          |
| QA06           | 8.5 | 0   | 8.8 | 8.5 | 0   | 8.8 | 8.5 | 0   | 8.8 | 8.8 | 8.7 | 0   | C-10 |          |
| QA07           | 8.8 | 8.7 | 8.0 | 8.8 | 8.7 | 8.0 | 8.8 | 8.7 | 8.0 | 8.8 | 0   | 8.8 | B-10 |          |
| QA08           | 0   | 25  | 0   | 0   | 0   | 5.5 | 0   | 0   | 5.5 | 0   | 25  | 0   | D-10 |          |
| QA09           | 0   | 25  | 0   | 0   | 25  | 0   | 0   | 0   | 3.2 | 0   | 25  | 0   | C-10 |          |

VL: 2 to 6, A8 to A3  
 VH: 7 to 13, A2, A1, A to I  
 VS: J to W, AA to ZZ, AAA to CCC  
 U: 14 to 83

Location of IC's

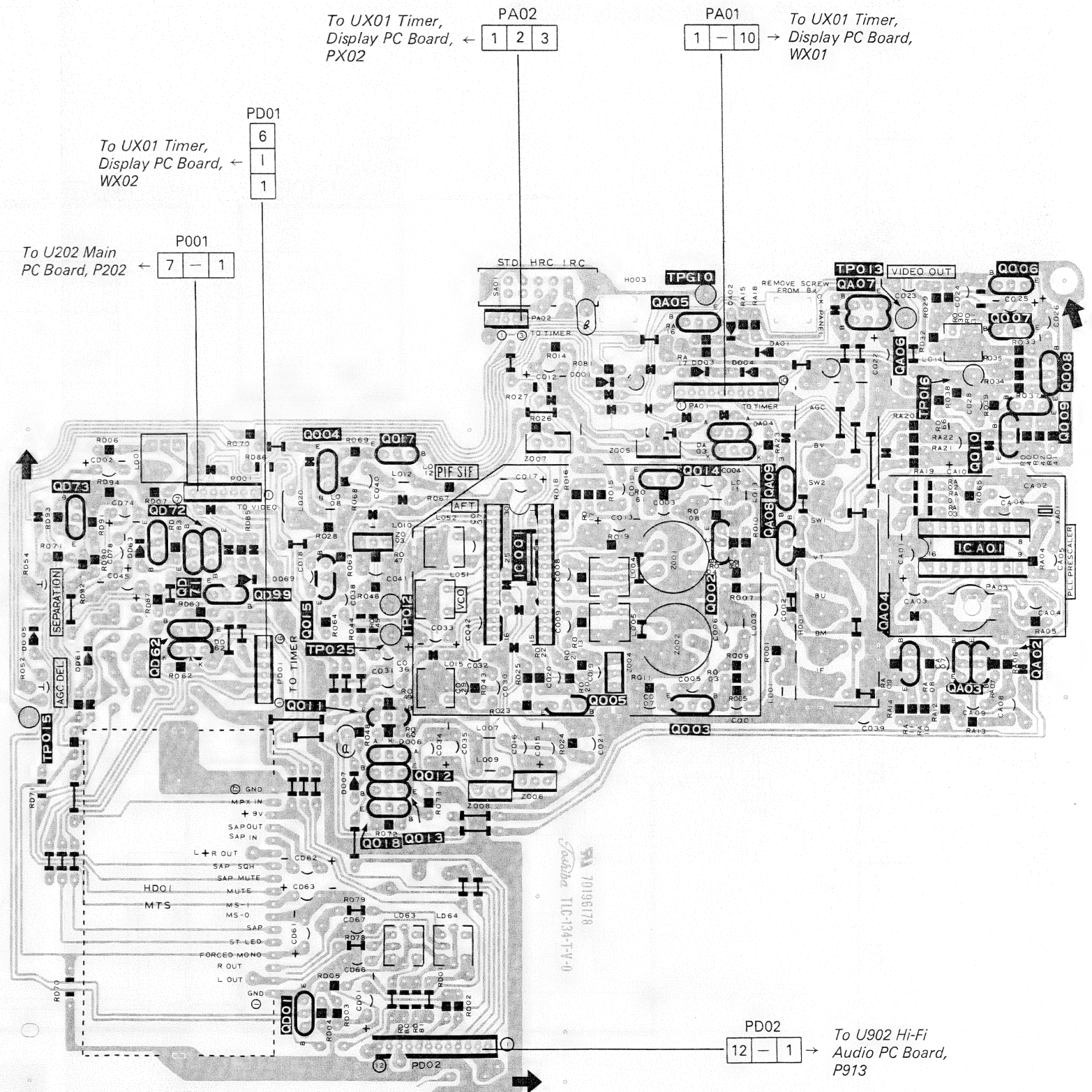
| Symbol No. | Location |
|------------|----------|
| ICA01      | D-11     |
| IC001      | D-8      |

Location of adjusting VR's

| Symbol No. | Location |
|------------|----------|
| RD52       | D-5      |
| RD54       | D-5      |

Location of Diodes

| Symbol No. | Location |
|------------|----------|
| D001       | C-8      |
| D003       | C-9      |
| D004       | C-9      |
| D005       | D-5      |
| D007       | E-7      |
| DD61       | D-6      |
| DD63       | D-6      |
| DD69       | D-7      |
| DA01       | C-10     |
| DA02       | B-9      |



U002 TV Receiving PC Board (PIF, MTS)



# 8-3. TV Receiving Circuit (Tuner, PIF, MTS)

U002 TV RECEIVING (PIF, SIF, FS SELECTOR, MTS DECODER)

H001 TUNER  
EL694FX2 (ET-7)

H003 ANTENNA TERMINAL  
VT-824

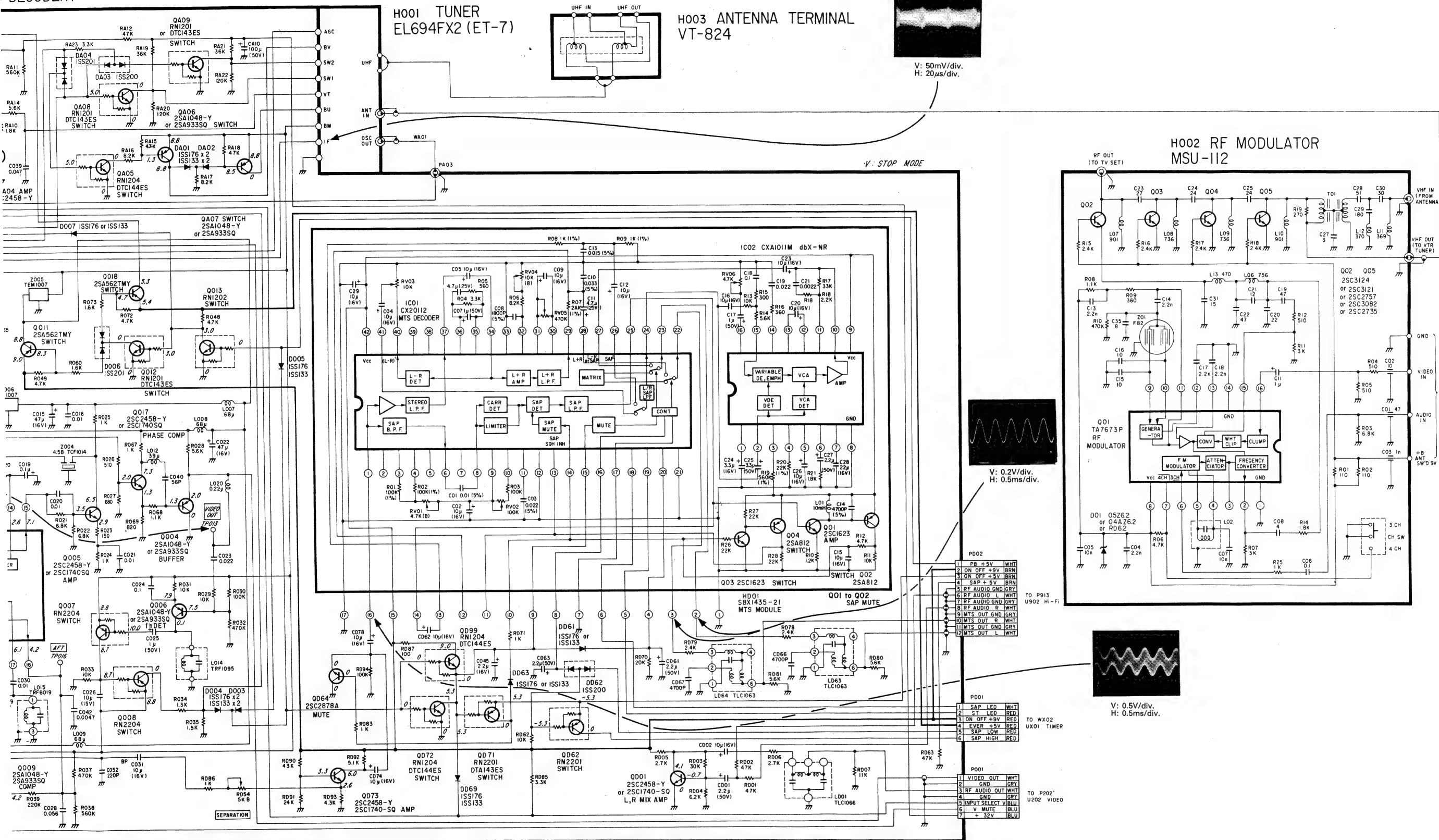
TO WX01  
UX01 TIMER

V: 50mV/div.  
H: 20μs/div.

TO WA02  
UX01 TIMER

V: 0.5V/div.  
H: 20μs/div.

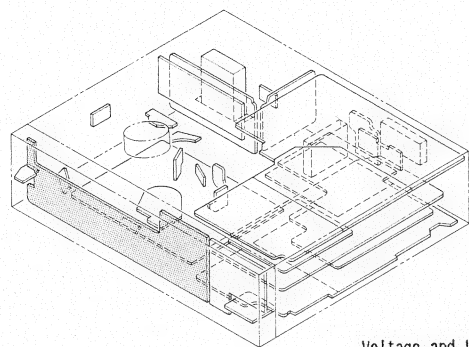
: DECODER )





D  
  
  
C  
  
  
B  
  
  
A  
  
  
A  
  
B  
  
C  
  
D

9-2. Timer, Display PC Board



Voltage and Location of Transistors  
V: PLAY

| Symbol No. | Voltage(Unit) |    |      | Location |
|------------|---------------|----|------|----------|
|            | E             | C  | B    |          |
| QG02       | -5            |    |      | B-12     |
| QG03       | -5            |    |      | B-12     |
| QG04       | -5            | -5 | -4.3 | B-11     |
| QG05       | -5            |    |      | B-7      |
| QX03       | -             | 5  |      | C-8      |
| QX04       | -             | -  | -    | B-10     |
| QX05       | -             | -  | -    | B-10     |
| QX06       | 0             | -  | -    | B-8      |
| QX07       | -             | -  | -    | B-7      |
| QX08       | -             | -  | -    | B-6      |
| QX09       | 0             | -  | -    | C-7      |

Location of Diodes

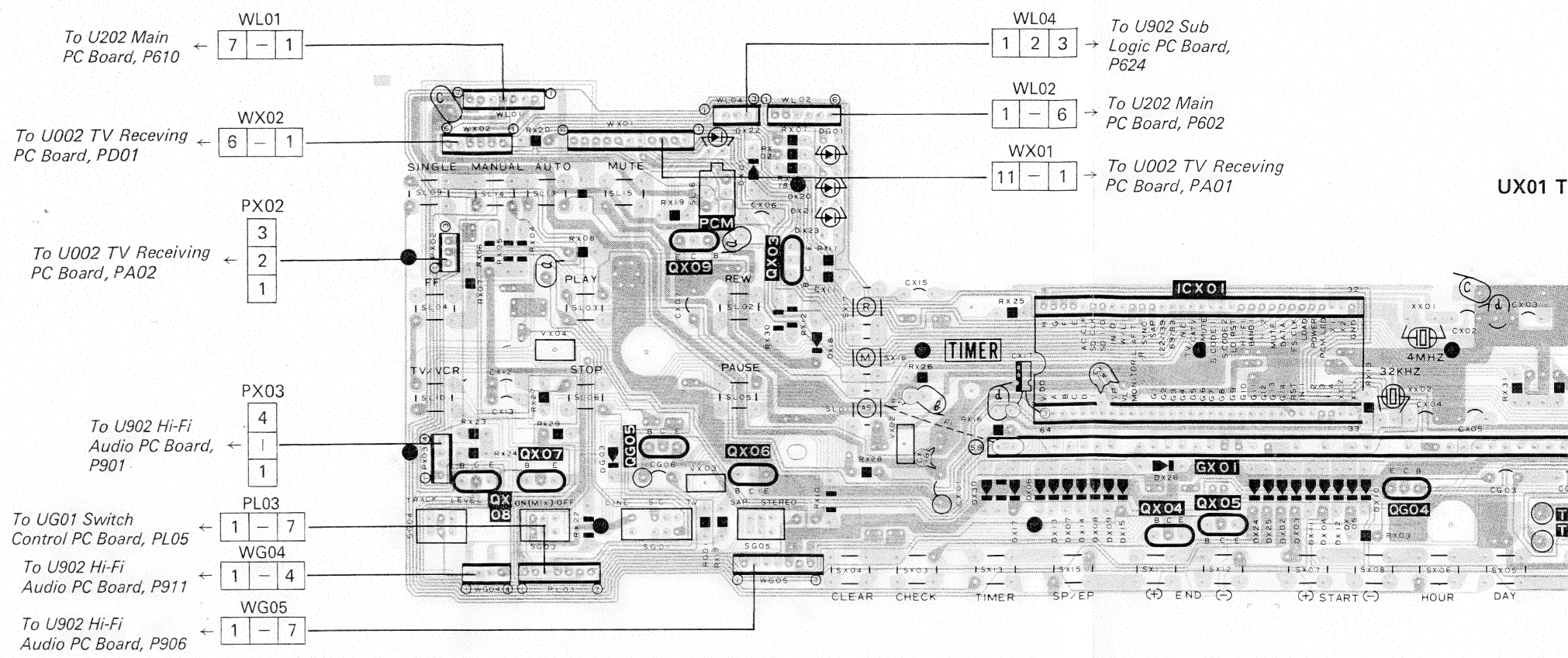
| Symbol No. | Location |
|------------|----------|
| DG01       | D-8      |
| DG02       | B-13     |
| DG03       | B-7      |
| DX01       | C-8      |
| DX02       | A-10     |
| DX03       | A-10     |
| DX04       | C-11     |
| DX05       | C-11     |
| DX06       | B-9      |
| DX07       | A-9      |
| DX08       | A-9      |
| DX09       | A-10     |
| DX10       | B-11     |
| DX11       | C-11     |
| DX12       | C-11     |
| DX13       | A-9      |
| DX14       | A-9      |
| DX15       | A-10     |
| DX17       | A-9      |
| DX18       | B-8      |

Location of adjusting VR

| Symbol No. | Location |
|------------|----------|
| R951       | B-14     |

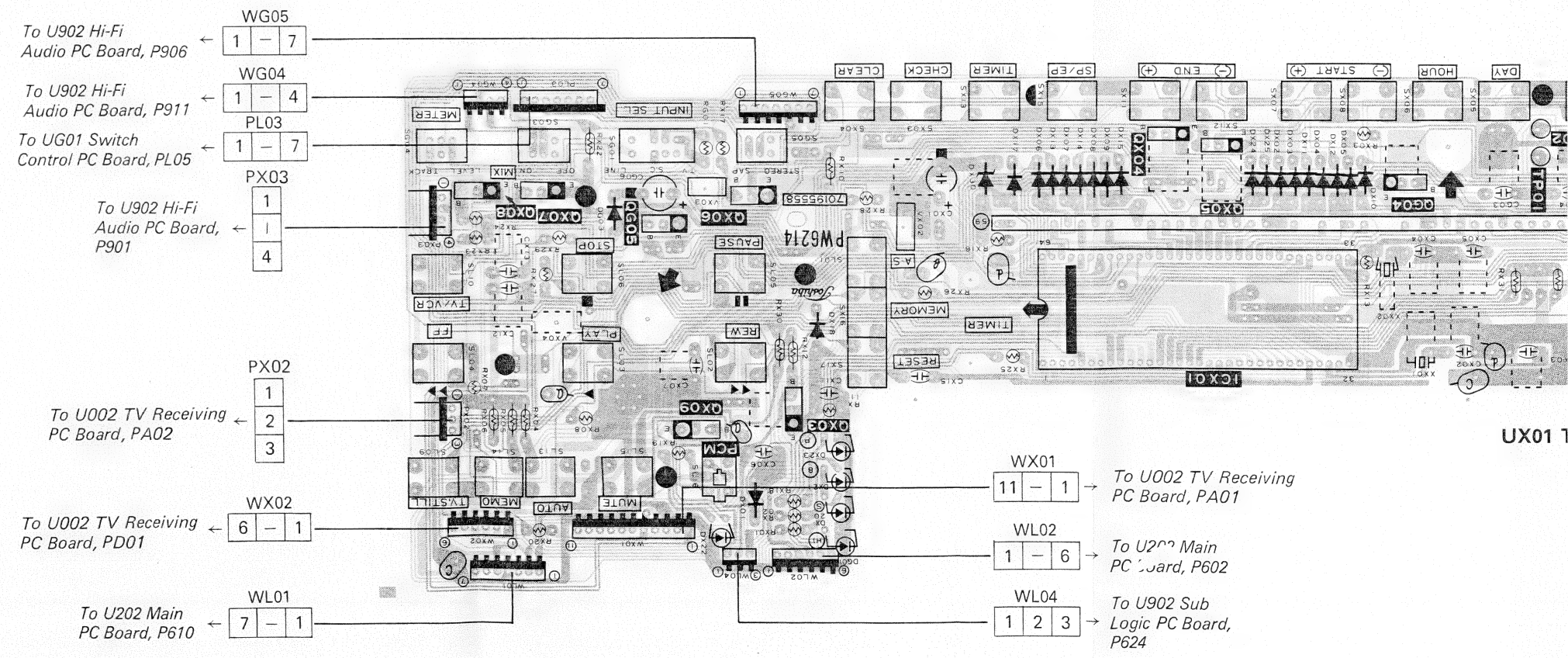
Location of IC'S

| Symbol No. | Location |
|------------|----------|
| ICX01      | C-10     |
| ICG01      | B-13     |
| ICR01      | B-13     |



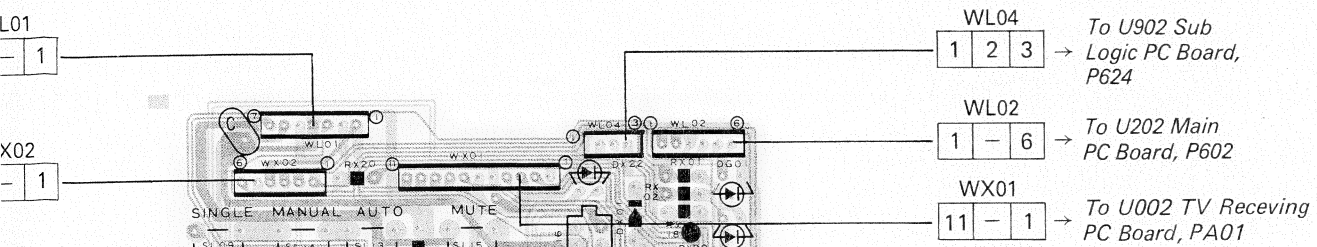
UX01 T

1 2 3 4 5 6 7 8 9 10 11

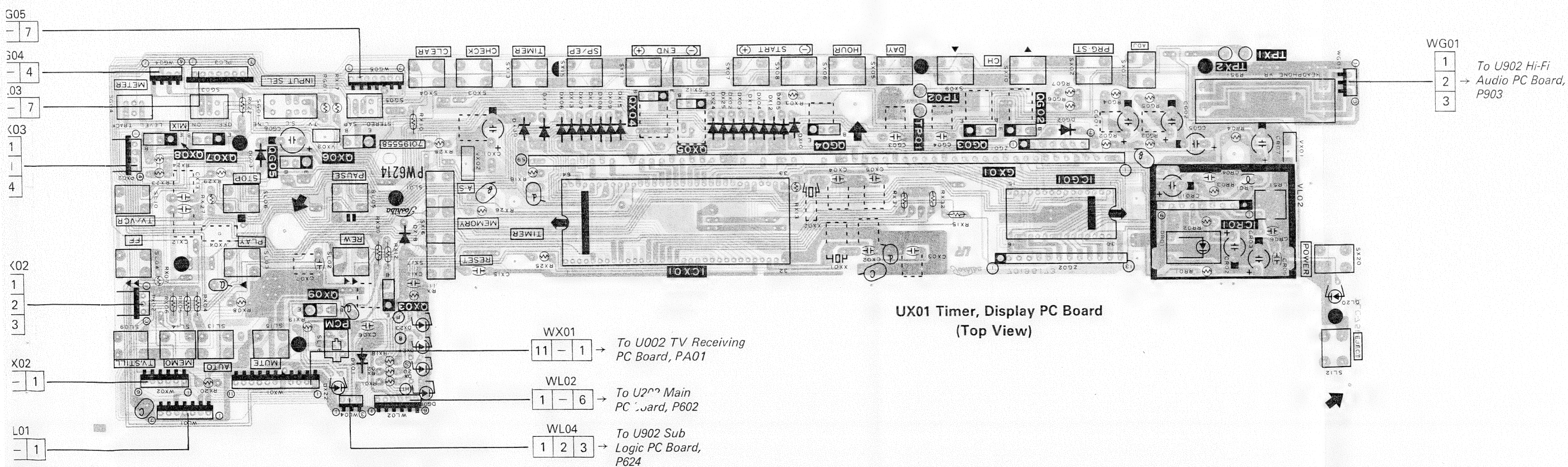
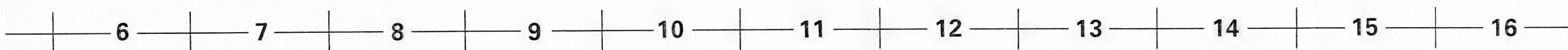


UX01 1





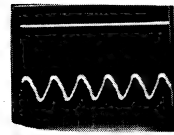
UX01 Timer, Display PC Board  
(Bottom View)



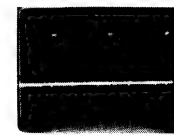
UX01 Timer, Display PC Board  
(Top View)

### 9-3. Timer, Display Circuit

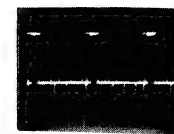
UX01 TIMER, DISPLAY



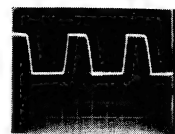
V: 5V/div.  
H: 2μs/div.



V: 10V/div.  
H: 2ms/div.



V: 10V/div.  
H: 2ms/div.



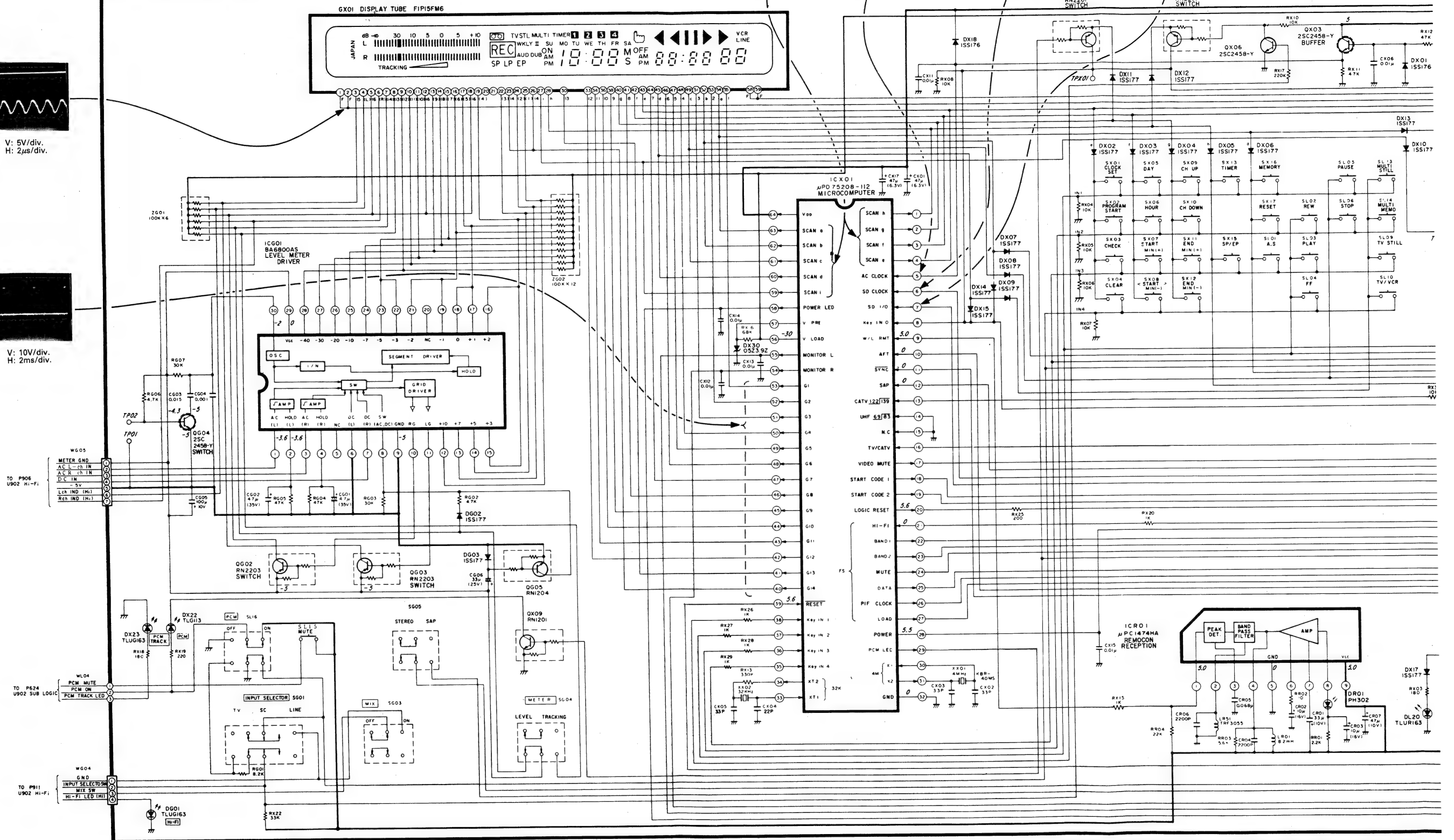
V: 2V/div.  
H: 5ms/div.



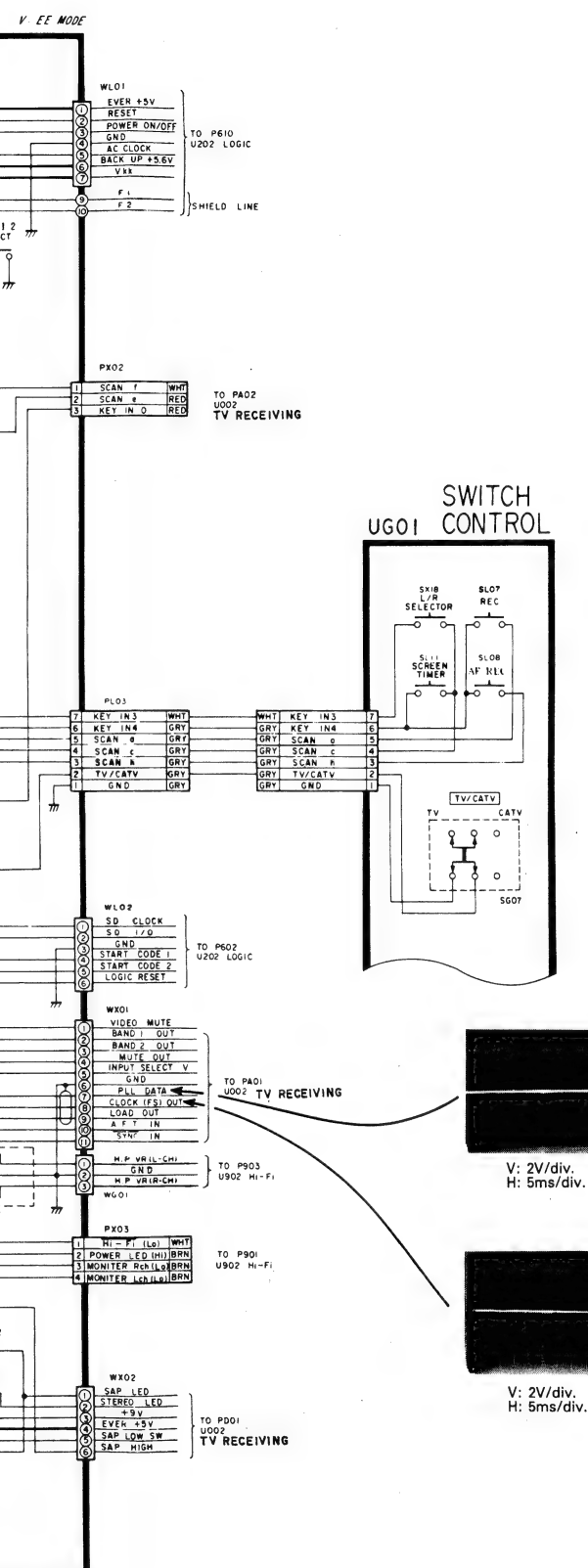
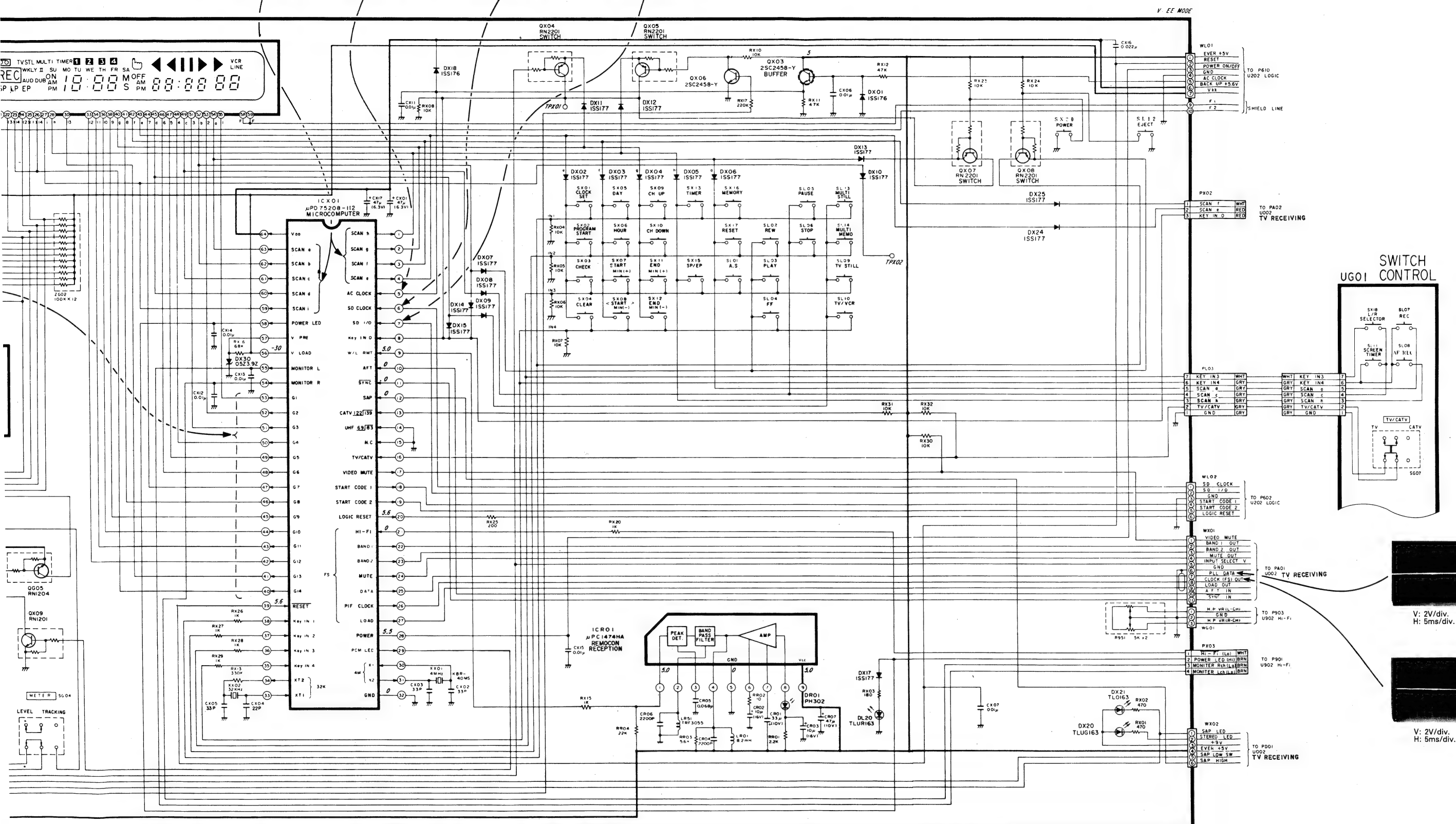
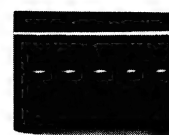
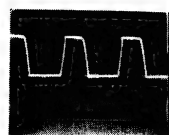
V: 2V/div.  
H: 0.5ms/div.



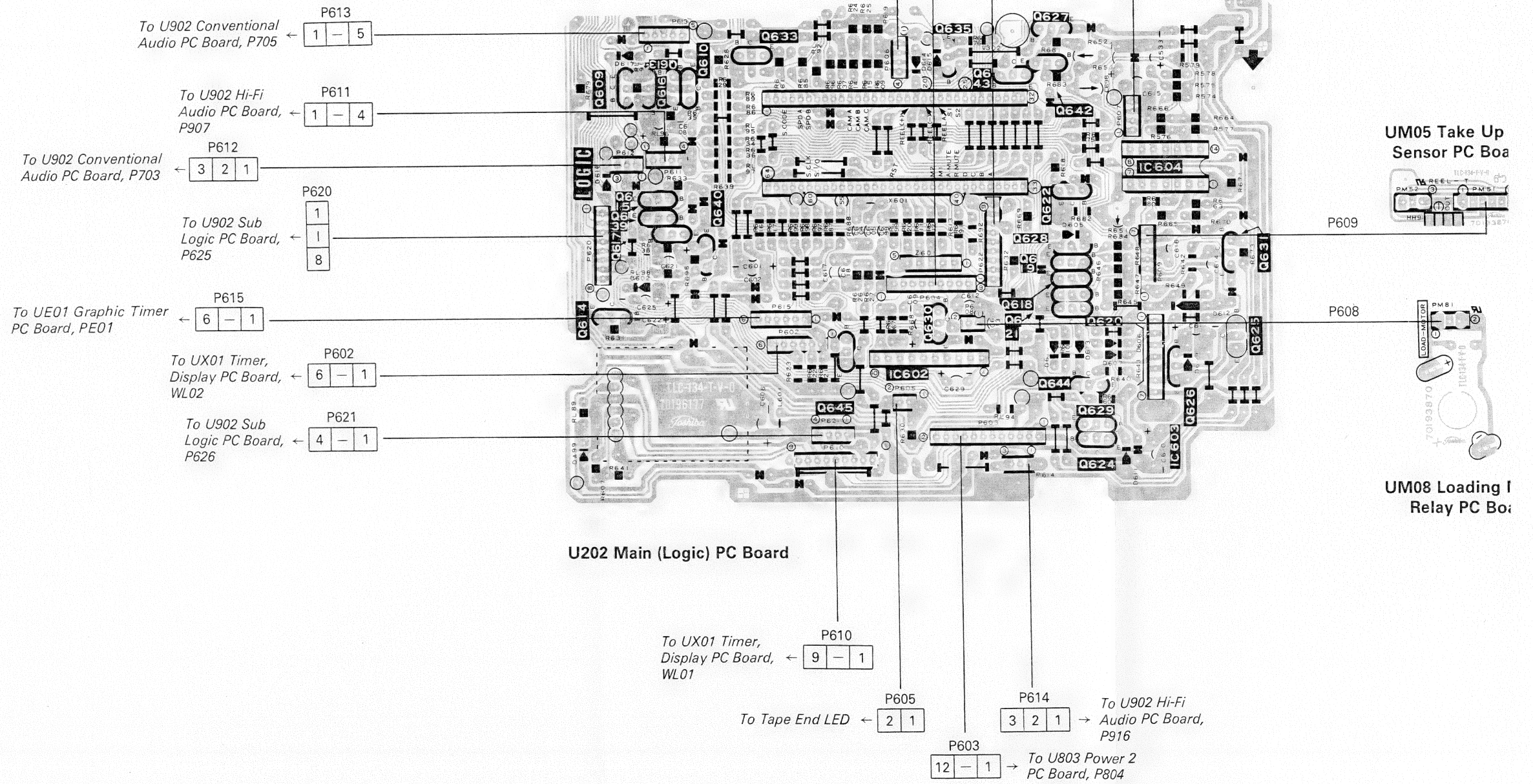
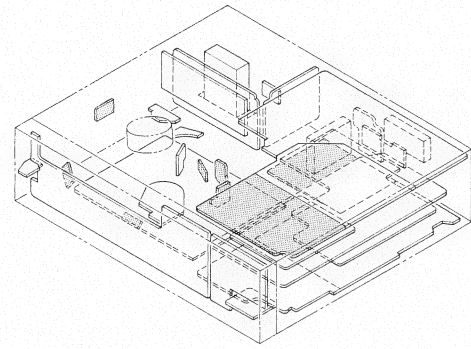
V: 2V/div.  
H: 0.5ms/div.





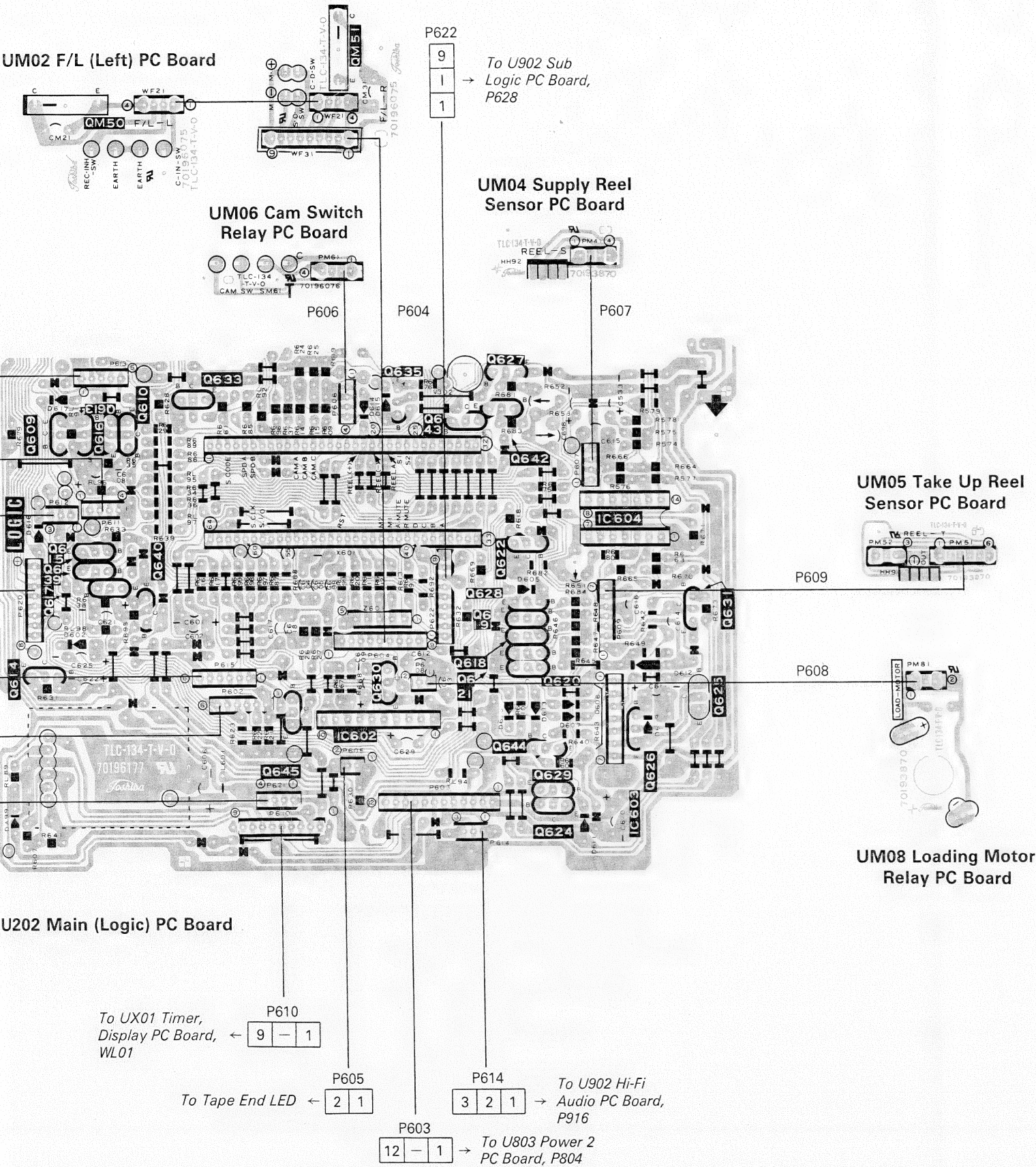


# 10-2. Logic PC Board





UM03 F/L (Right) PC Board



V : REC  
(V) : PLAY

| Symbol No. | Voltage8(Unit:V) |          |          | Location |
|------------|------------------|----------|----------|----------|
|            | E                | C        | B        |          |
| Q609       | 8.14             | 0.0      | 8.6      | C-6      |
| Q610       | 8.6(7.9)         | 0.0(7.9) | 8.6(7.2) | C-7      |
| Q613       | 8.6              | 0.0      | 8.14     | C-7      |
| Q614       | 8.6              | 8.6      | 7.8      | E-6      |
| Q615       | 4.8(4.8)         | 4.7(0.0) | 4.3(4.8) | D-6      |
| Q616       | 8.6(8.6)         | 0.0(7.9) | 8.6(7.9) | C-7      |
| Q617       | 4.8(4.8)         | 4.7(0.0) | 4.1(4.8) | D-6      |
| Q618       | 0.0              | 3.8      | 0.0      | E-9      |
| Q619       | 0.0              | 3.8      | 0.1      | D-9      |
| Q620       | 0.0              | 0.4      | 0.1      | E-9      |
| Q621       | 0.0              | 0.1      | 2.3      | E-9      |
| Q622       | 0.0              | 0.1      | 2.3      | D-9      |
| Q624       | 15.0             | 8.1      | 15.0     | F-9      |
| Q625       | 14.9             | 3.2      | 14.5     | E-10     |
| Q626       | 3.2              | 14.5     | 3.7      | E-10     |
| Q627       | 0.0              | 0.1      | 4.7      | C-9      |
| Q628       | 0.0              | 0.4      | 0.0      | D-9      |
| Q629       | 0.0              | 15.0     | 0.0      | E-9      |
| Q630       | 0.0              | 8.6      | 0.0      | E-8      |
| Q631       | 0.0              | 2.9      | 1.7      | D-10     |
| Q633       | 4.6              | 4.8      | 0.1      | C-7      |
| Q635       | 4.7              | 4.7      | 0.5      | C-8      |
| Q639       | 4.8              | 0.0      | 4.6      | D-6      |
| Q640       | 4.3(0.5)         | 4.9(4.9) | 4.9(0.0) | D-7      |
| Q642       | 0.0              | 0.1      | 2.5      | C-9      |
| Q643       | 0.0              | 0.4      | 0.2      | C-9      |
| Q644       | 4.9              | 0.2      | 4.3      | E-9      |
| Q645       | 0.0              | 4.8      | 0.0      | E-8      |
| QM50       | -                | -        | -        | B-7      |
| QM51       | -                | -        | -        | A-8      |

Location of Diodes

| Symbol No. | Location |
|------------|----------|
| D602       | D-6      |
| D605       | D-9      |
| D606       | E-10     |
| D607       | E-9      |
| D609       | E-10     |
| D610       | E-9      |
| D611       | F-10     |
| D612       | E-10     |
| D613       | E-10     |
| D614       | E-9      |
| D615       | C-8      |
| D616       | C-8      |
| D617       | C-6      |
| DA99       | F-6      |

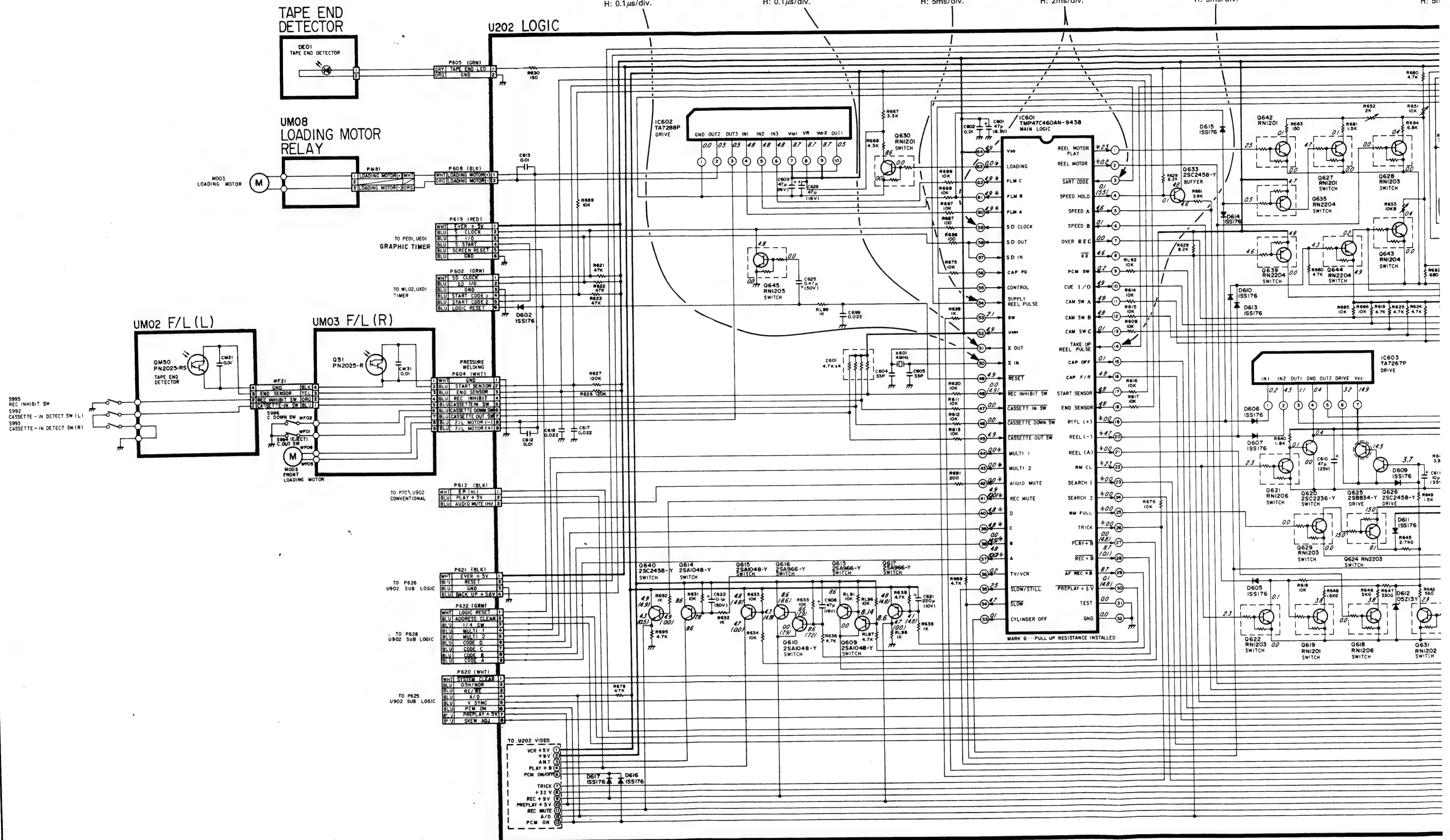
Location of IC's

| Symbol No. | Location |
|------------|----------|
| IC601      | D-8      |
| IC602      | E-8      |
| IC603      | E-10     |
| IC604      | D-10     |

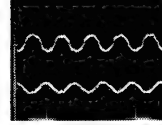
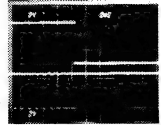
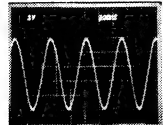
Location of adjusting VR's

| Symbol No. | Location |
|------------|----------|
| R651       | D-9      |
| R652       | C-9      |
| R653       | C-9      |

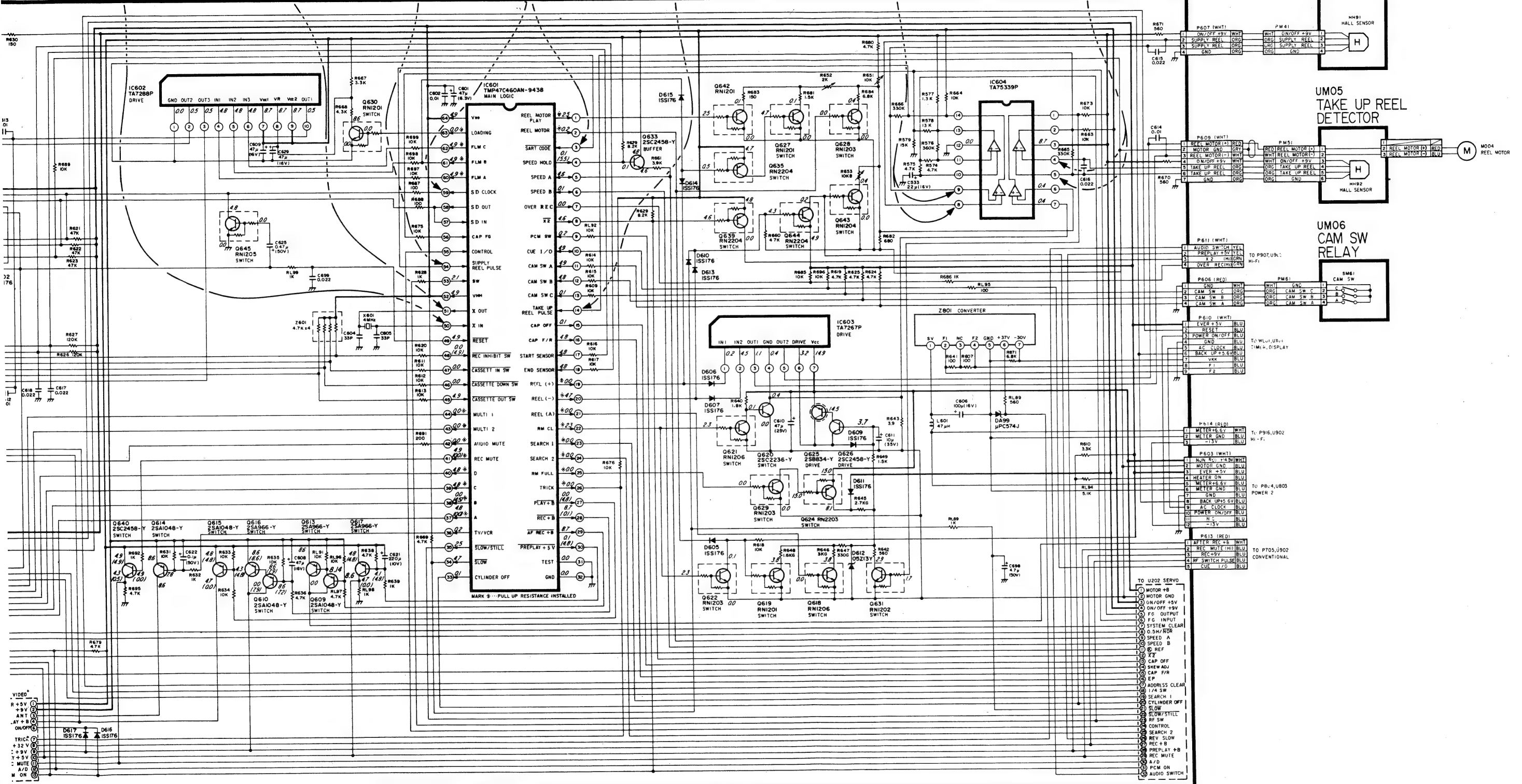
# 10-3. Logic Circuit



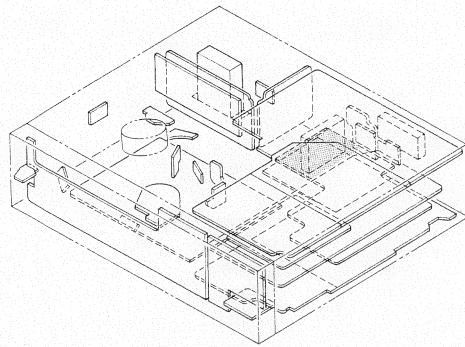




LOGIC



## 10-4. Sub Logic PC Board



Voltage and Location of Transistors

| Symbol No. | E   | C   | B   | Location |
|------------|-----|-----|-----|----------|
| Q611       | 0.0 | 0.1 | 0.7 | C-6      |
| Q612       | 0.0 | 4.9 | 0.1 | C-7      |
| Q638       | 0.1 | 4.9 | 0.0 | C-5      |
| Q697       | —   | —   | —   | B-6      |
| Q698       | 0.4 | 0.0 | 0.2 | D-6      |
| Q699       | 0.4 | 4.9 | 1.0 | D-5      |
| QX98       | 0.0 | 0.0 | 0.7 | B-6      |
| QX99       | 0.0 | 5.6 | 0.0 | B-7      |

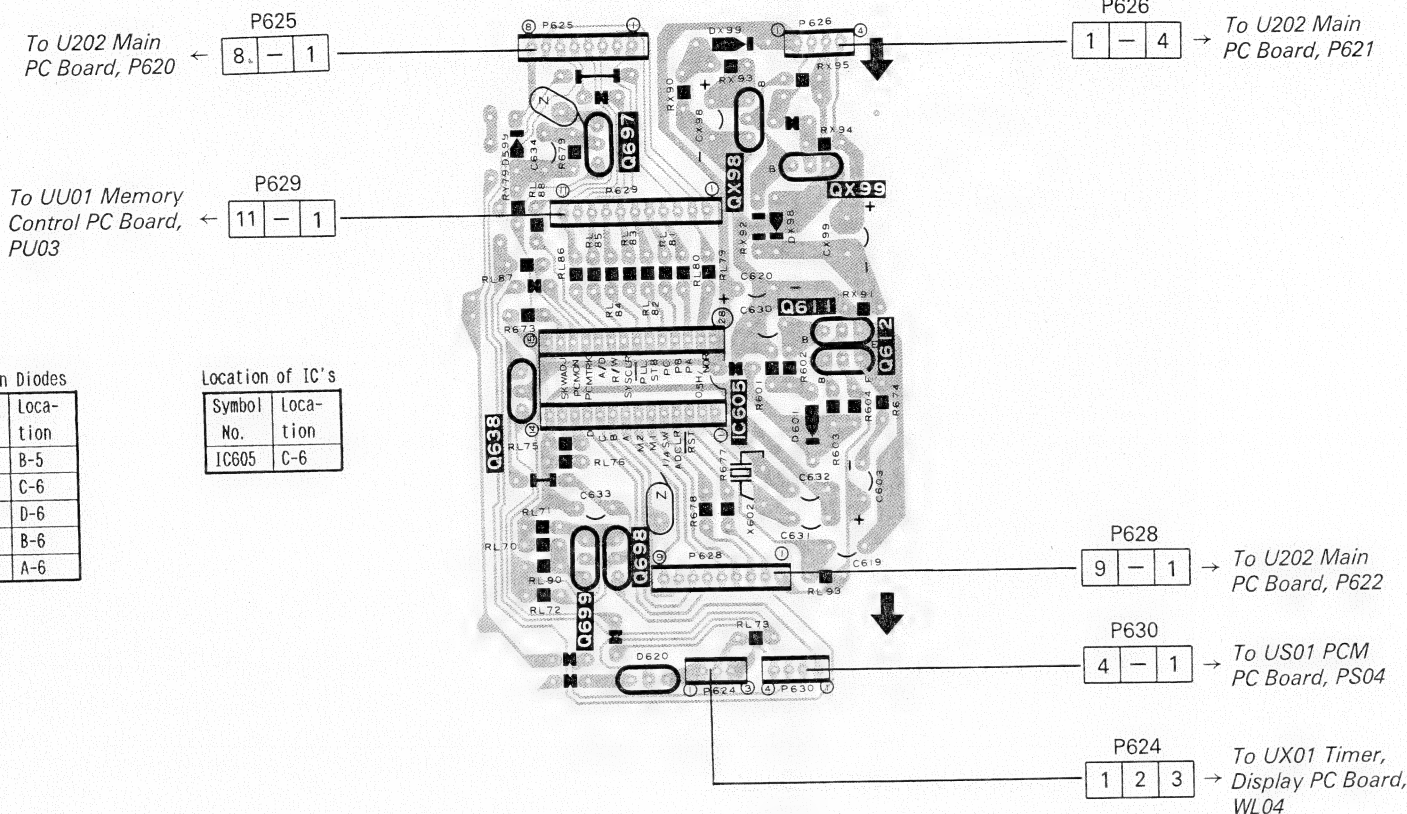
Location Diodes

| Symbol No. | Location |
|------------|----------|
| D599       | B-5      |
| D601       | C-6      |
| D620       | D-6      |
| DX98       | B-6      |
| DX99       | A-6      |

Location of IC's

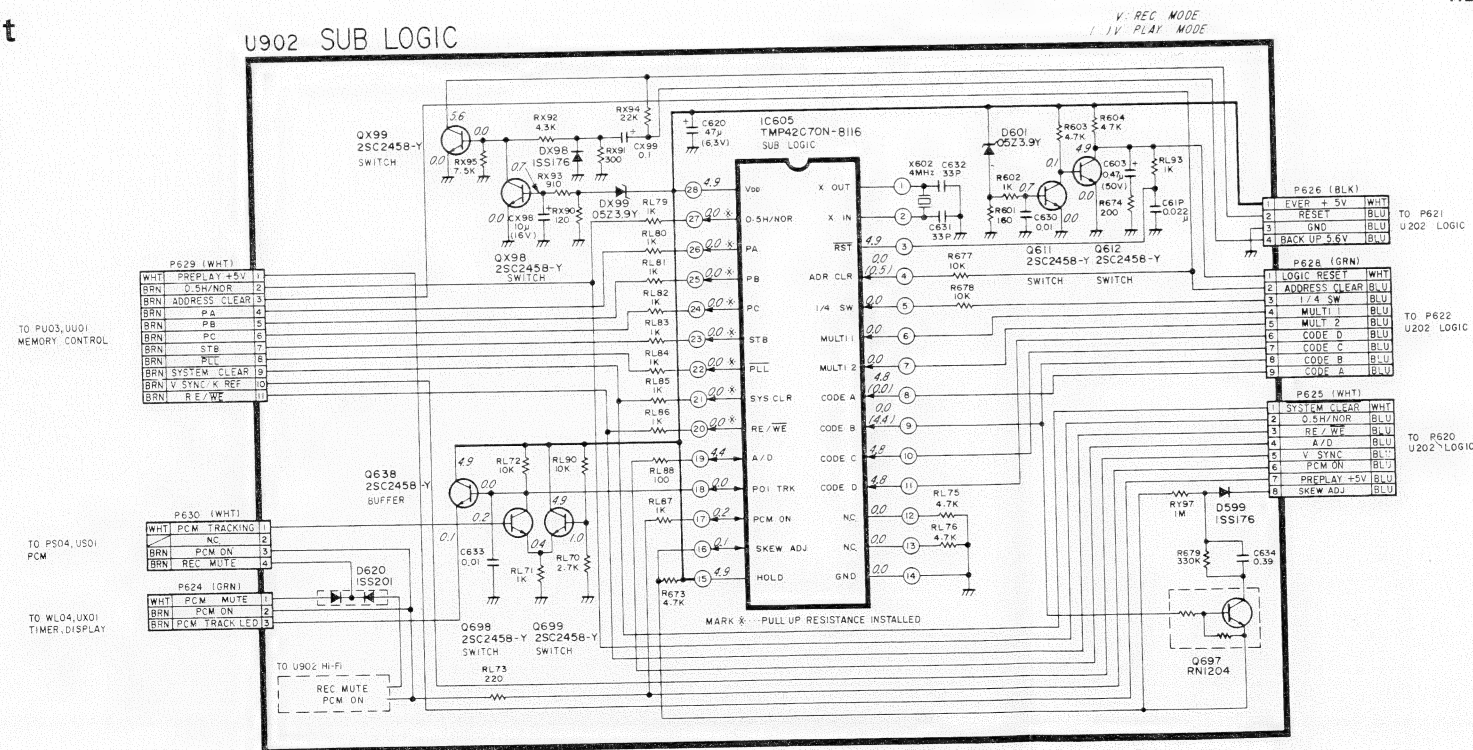
| Symbol No. | Location |
|------------|----------|
| IC605      | C-6      |

U902 Sub Logic PC Board

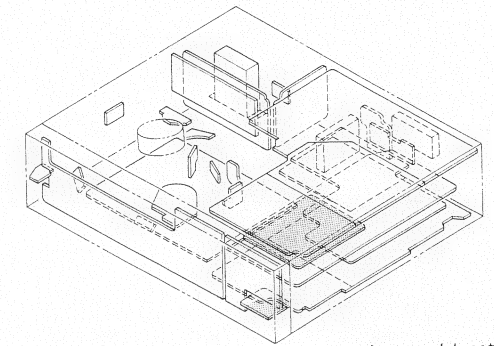


## 10-5. Sub Logic Circuit

U902 SUB LOGIC



## 11-2. Graphic Timer PC Board



Voltage and Location of

Location Diodes

| Symbol No. | Location |
|------------|----------|
| DE02       | D-14     |
| DE03       | D-14     |
| DE04       | C-14     |
| DE05       | D-14     |
| DE06       | D-14     |
| DE07       | D-14     |

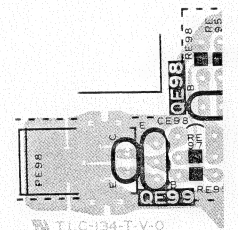
Location of adjusting VR's

| Symbol No. | Location |
|------------|----------|
| RE51       | B-16     |

Location IC's

| Symbol No. | Location |
|------------|----------|
| ICE01      | D-16     |
| ICE02      | B-14     |
| ICE03      | B-14     |
| ICE04      | B-15     |
| ICE05      | C-14     |

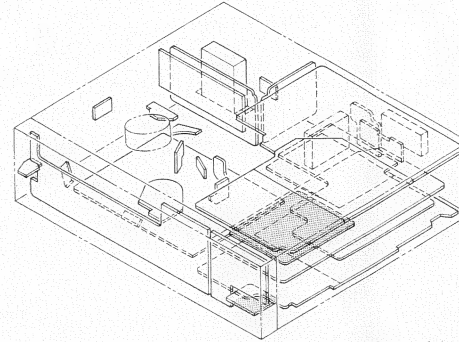
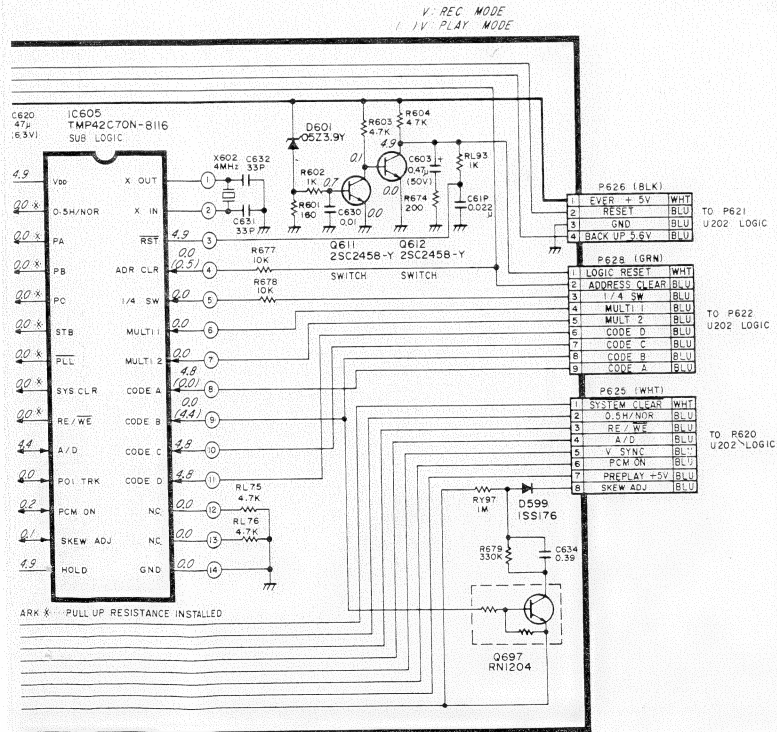
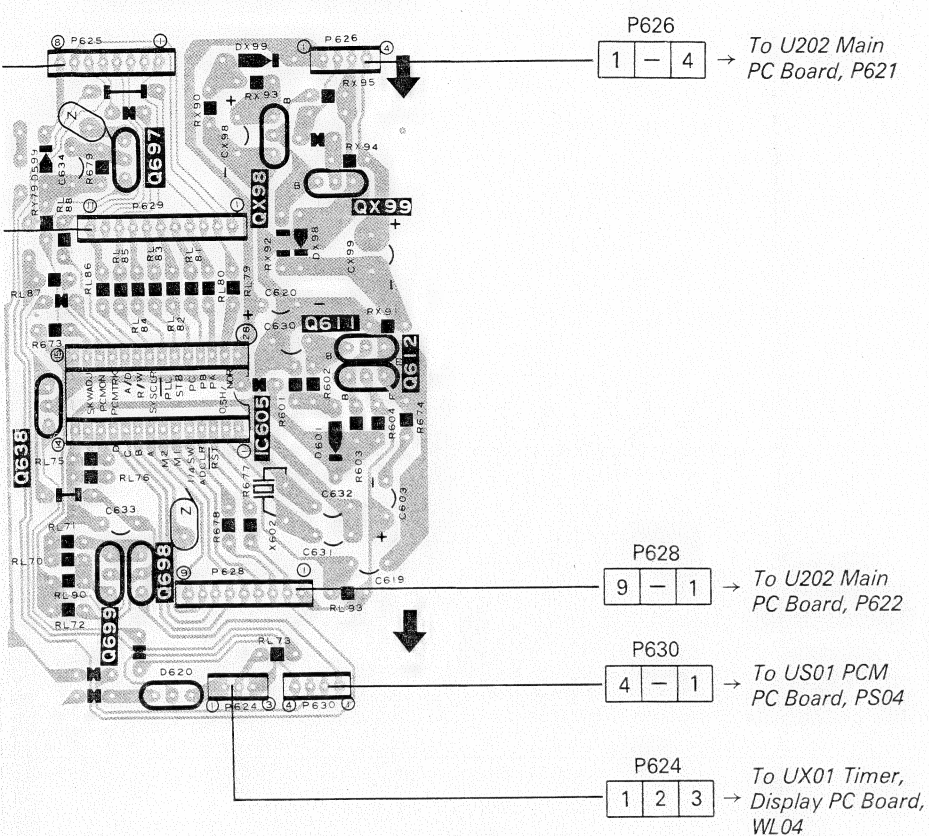
## UG02 Graphic Timer



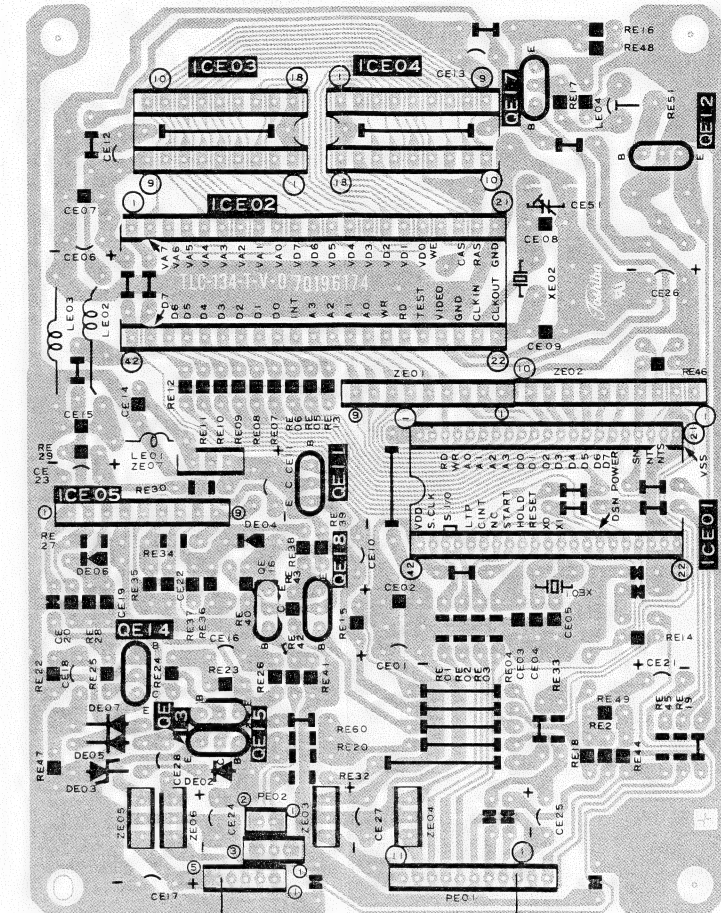


|   |   |   |   |    |    |    |    |    |    |    |
|---|---|---|---|----|----|----|----|----|----|----|
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|----|----|----|----|----|----|----|

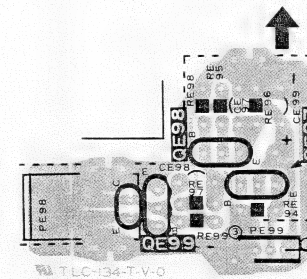
## U902 Sub Logic PC Board



## UE01 Graphic Timer PC Board



## UG02 Graphic Timer Jack PC Board



| Symbol No. | Location |
|------------|----------|
| DE02       | D-14     |
| DE03       | D-14     |
| DE04       | C-14     |
| DE05       | D-14     |
| DE06       | D-14     |
| DE07       | D-14     |

| Symbol No. | Location |
|------------|----------|
| RE51       | B-16     |

| Symbol | Location |
|--------|----------|
| ICE01  | D-16     |
| ICE02  | B-14     |
| ICE03  | B-14     |
| ICE04  | B-15     |
| ICE05  | C-14     |

Voltage and Location of Transistors

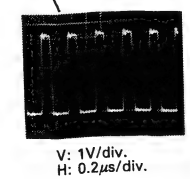
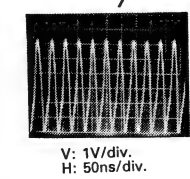
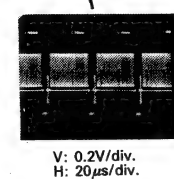
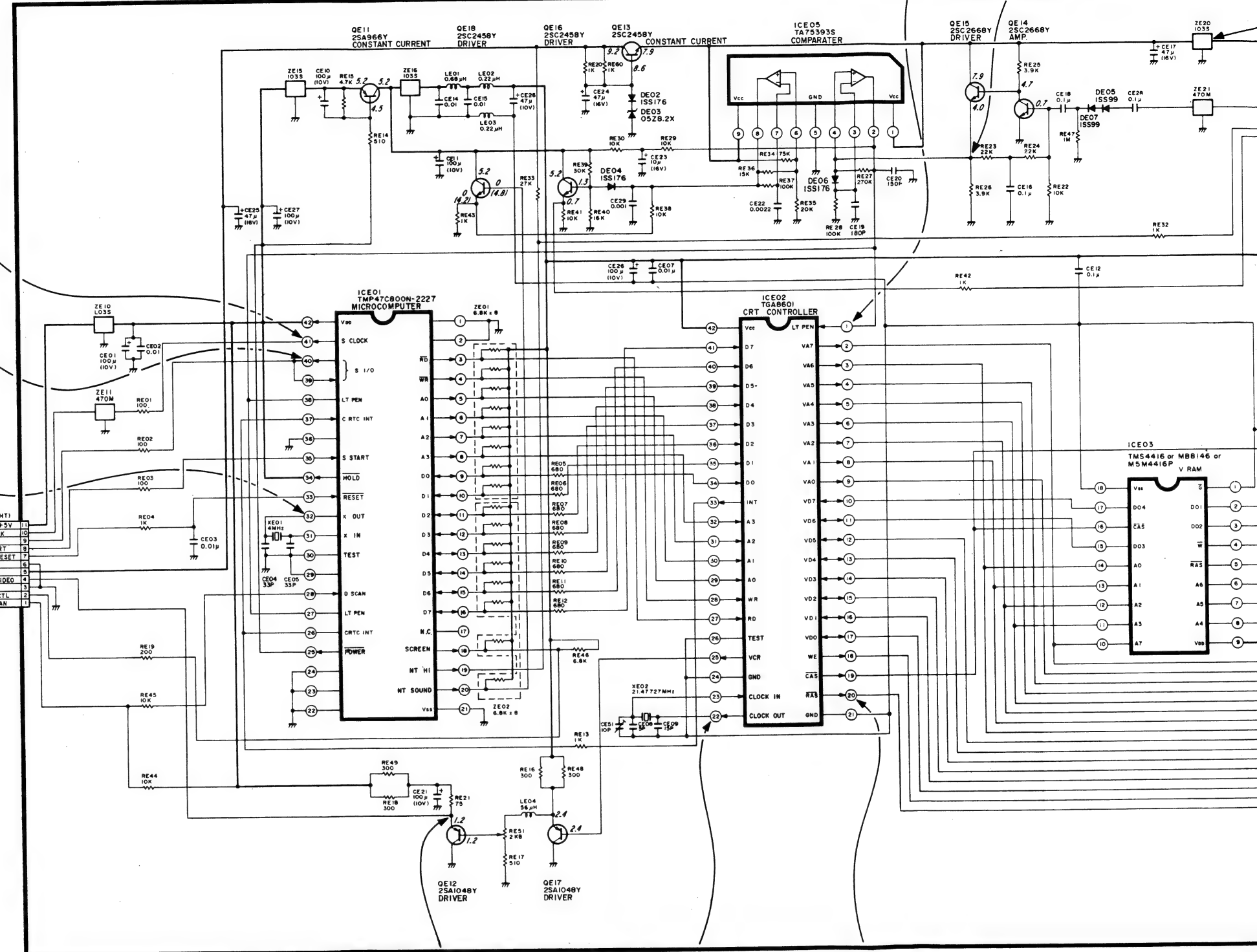
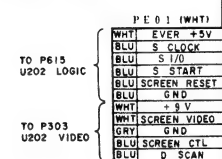
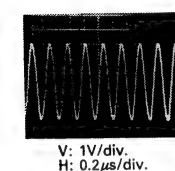
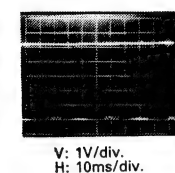
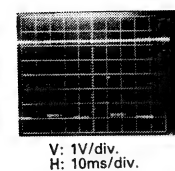
V : REC  
(V): PLAY

| Symbol<br>No. | Voltage(Unit:V) |     |        | Location |
|---------------|-----------------|-----|--------|----------|
|               | E               | C   | B      |          |
| QE11          | 5.2             | 5.2 | 4.5    | C-15     |
| QE12          | 1.2             | 0   | 1.2    | B-16     |
| QE13          | 7.9             | 9.2 | 8.6    | D-14     |
| QE14          | 0               | 4.7 | 0.7    | D-14     |
| QE15          | 4.0             | 7.9 | 4.7    | D-14     |
| QE16          | 0.7             | 5.2 | 1.3    | D-14     |
| QE17          | 2.4             | 0   | 2.4    | B-15     |
| QE18          | 0(4.2)          | 5.2 | 0(4.8) | D-15     |
| QE97          | 1.4             | 7.9 | 2.0    | E-12     |
| QE98          | 0.6             | 2.0 | 1.2    | E-12     |
| QE99          | 0               | 7.9 | 0.4    | F-12     |



# 11-3. Graphic Timer Circuit

UE01 GRAPHIC TIMER

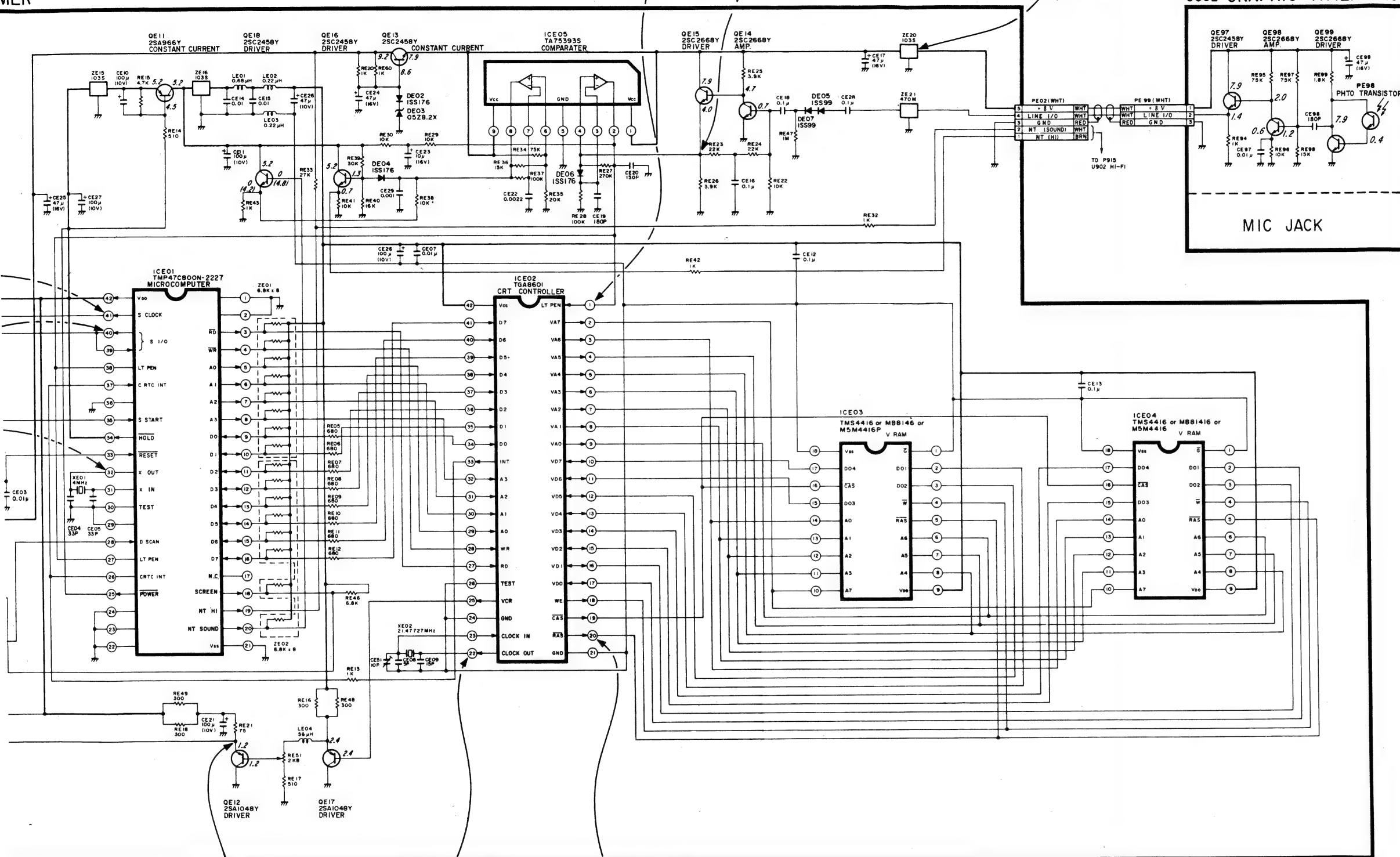


MER

V: 1V/div.  
H: 0.5ms/div.V: 1V/div.  
H: 0.5ms/div.V: 1V/div.  
H: 0.5ms/div.

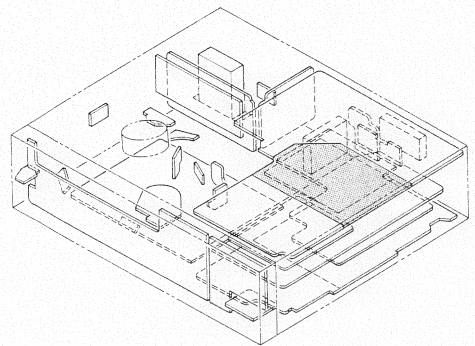
UG02 GRAPHIC TIMER JACK

MIC JACK

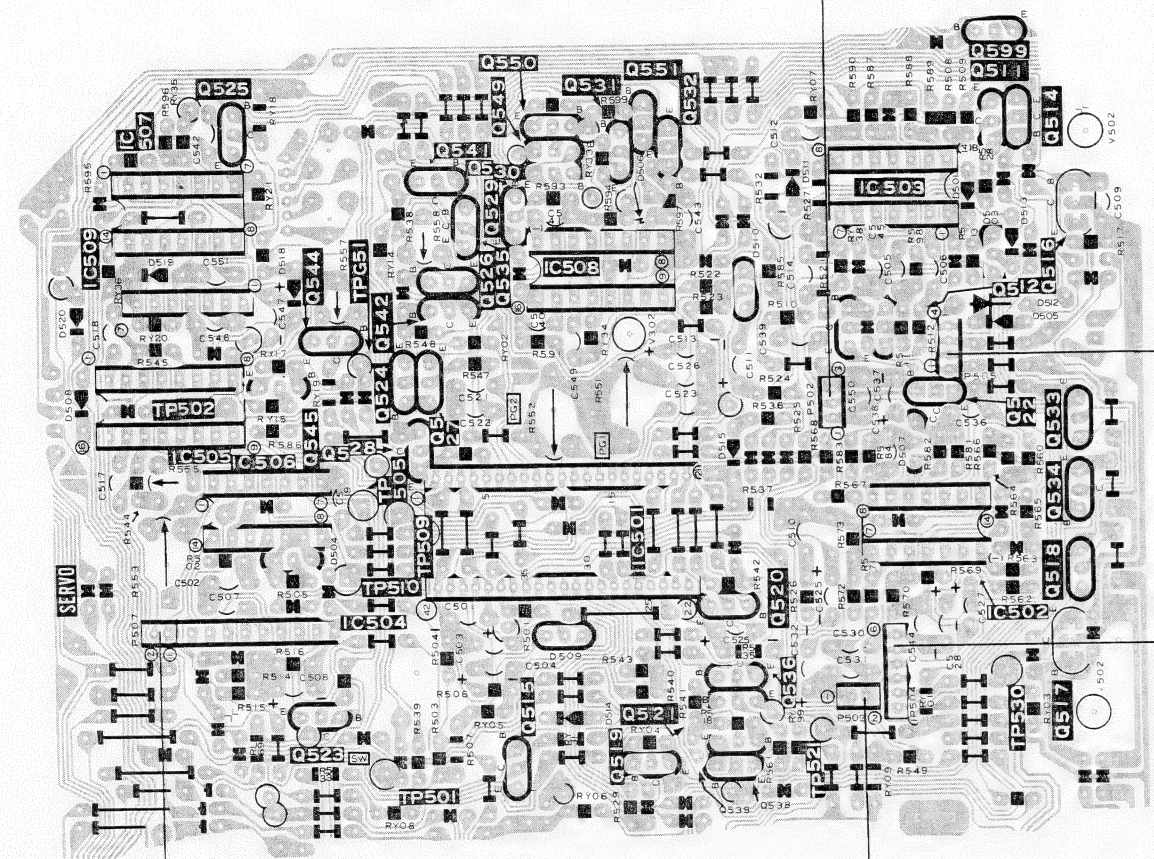
V: 0.2V/div.  
H: 20μs/div.V: 1V/div.  
H: 50ns/div.V: 1V/div.  
H: 0.2μs/div.



12-2. Servo PC Board



U202 Main (Servo) PC Board



P502  
3  
2  
1  
→ To UM07 ACE Head  
Relay PC Board,  
PM71

P505  
4  
1  
→ To Capstan Motor

P504  
6  
1  
→ To Cylinder Drive Unit

P507  
2  
1  
→ To UG01 Switch  
Control PC Board,  
W503

P503  
1  
2  
→ To Capstan FG

Voltage and Location of Transistors

| Symbol<br>No. | Voltage(Unit:V)      |                    |                      |                      |                        |                    | Loc |
|---------------|----------------------|--------------------|----------------------|----------------------|------------------------|--------------------|-----|
|               | E                    |                    | C                    |                      | B                      |                    |     |
|               | PLAY                 | REC                | PLAY                 | REC                  | PLAY                   | REC                |     |
| Q511          | 2.5(2.5)             |                    | 2.5 (2.5)            |                      | 2.5 (2.5)              |                    | C-  |
| Q512          | 3.0(2.8)             | 2.2 (2.1)          | 0.67(0.69)           | 0.67(0.69)           | 2.9 (2.8)              | 2.2 (2.1)          | D-  |
| Q513          | 0 (0)                | —                  | 2.9 (2.8)            | 2.2 (2.1)            | 0 (0)                  | —                  | D-  |
| Q514          | 0 (0)                | —                  | 2.5 (2.5)            | —                    | 0.22(0.22)             | 0.21(0.21)         | C-  |
| Q515          | 4.4 (0.49)           | —                  | 4.7 (0.5)            | —                    | 0.25 (3.8)             | —                  | E-  |
| Q516          | 2.3 (1.7)            | —                  | 14.6 (14.6)          | 14.4 (14.5)          | 3.5 (2.9)              | —                  | D-  |
| Q517          | 5.4 (5.4)            | 5.3                | 14.4 (14.6)          | 14.3 (14.5)          | 6.6 (6.6)              | 6.7                | E-  |
| Q518          | 5.4 (5.4)            | 5.3                | 44.0mV<br>(40.0mV)   | 39.0mV<br>(33.0mV)   | 6.6 (6.6)              | 6.7                | E-  |
| Q519          | 4.8                  |                    | 0(0)                 |                      | 5.0 (5.0)              |                    | E-  |
| Q520          | 0 (0)                |                    | 64.5mV<br>(53.0mV)   | 5.0 (4.9)            | 4.8 (4.2)              | 46.5mV<br>(52.0mV) | E-  |
| Q521          | 1.8 (50mV)           | 1.8 (1.8)          | 1.8 (50mV)           |                      | 2.8<br>(-12.8mV)       | (15.0mV)           | E-  |
| Q522          | 0 (0)                | —                  | 2.1 (1.4)            | —                    | 34.9mV<br>(33.9mV)     | 27.0mV<br>(25.8mV) | D-  |
| Q523          | 4.8 (4.8)            | —                  | 4.9 (4.9)            | —                    | 4.8(4.8)               | —                  | E-  |
| Q524          | 4.8                  |                    | 5.0 (5.0)            |                      | 24.8mV<br>(7mV)        |                    | D-  |
| Q525          | 0.23<br>(0.21)       | —                  | -34.0mV<br>(0V)      | 48.0mV               | 63.0mV<br>(53.0mV)     | 4.9 (4.8)          | C-  |
| Q526          | 4.8                  | —                  | 8.6 (8.5)            | —                    | 4.8 (4.8)              | —                  | D-  |
| Q527          | 4.8                  | —                  | 5.0 (5.0)            | —                    | 25mV(73mV)             | —                  | D-  |
| Q528          | 0 (0)                | —                  | 25mV (75mV)          | (6.0)                | 4.8 (4.8)              | —                  | D-  |
| Q529          | 4.8 (4.8)            | —                  | 4.8 (4.8)            | —                    | 51.2mV<br>(50.1mV)     | 43.1mV<br>(41.8mV) | C-  |
| Q530          | 4.8 (4.8)            | —                  | 4.8 (4.8)            | —                    | 4.8 (4.8)              | —                  | C-  |
| Q531          | 4.8 (4.8)            | —                  | 4.8 (4.8)            | —                    | 51mV<br>(50.1mV)       | 43mV<br>(41.8mV)   | C-  |
| Q532          | 0 (0)                | —                  | 98.6mV<br>(97.6mV)   | 90.3mV<br>(89.1mV)   | 2.7 (2.7)              | —                  | C-  |
| Q533          | 0 (0)                |                    | 6.7 (6.7)            |                      | 59.5mV<br>(59.4mV)     | 49.0mV<br>(49.2mV) | D-  |
| Q534          | 0 (0)                |                    | 3.6 (2.9)            | 3.5                  | 69.4mV<br>(69.2mV)     | 58.6               | D-  |
| Q535          | 0 (0)                | —                  | 78.0mV<br>(76.8mV)   | 82.6mV<br>(81.3mV)   | 4.0 (4.0)<br>4.0 (4.0) | —                  | D-  |
| Q536          | 0 (0)                | —                  | 1.8 (1.8)            | —                    | 1.8 (1.8)              | —                  | E-  |
| Q538          | 0 (0)                | —                  | 4.6 (4.6)            | 0.51(0.51)           | 189.2mV<br>(189.2mV)   | 25.4mV<br>(24.2mV) | F-  |
| Q539          | 189.3mV<br>(189.5mV) | 25.8mV<br>(24.6mV) | 188.9mV<br>(189.0mV) | 3.0mV<br>(2.8mV)     | 0.88<br>(0.88)         | 13.0mV<br>(41.2mV) | F-  |
| Q541          | 0 (0)                |                    | 4.0 (4.0)            |                      | 189.4mV<br>(189.4mV)   | 25.8mV<br>(24.6mV) | C-  |
| Q542          | 4.8                  | —                  | 1.1 (1.1)            | —                    | 4.8 (4.8)              | —                  | D-  |
| Q544          | 0.23<br>(0.20)       | —                  | 50.0mV<br>(-45.0mV)  | 165.0mV<br>(-50.0mV) | 4.7 (4.1)              | 46.0mV<br>(51mV)   | D-  |
| Q545          | 4.8                  |                    | 4.8                  |                      | 4.5 (4.4)              | —                  | D-  |
| Q549          | 4.8 (4.8)            | —                  | 4.8 (4.8)            | —                    | 4.8 (4.8)              | —                  | C-  |
| Q550          | 4.8 (4.8)            | —                  | 4.8 (4.8)            | —                    | 0.70<br>(0.71)         | (0.70)             | C-  |
| Q551          | 0 (0)                | —                  | 51.3mV<br>(50.3mV)   | 43.1mV<br>(49.1mV)   | 4.2 (4.2)              | —                  | C-  |
| Q555          | 0                    |                    | 2.5                  |                      | 0                      | —                  | C-  |

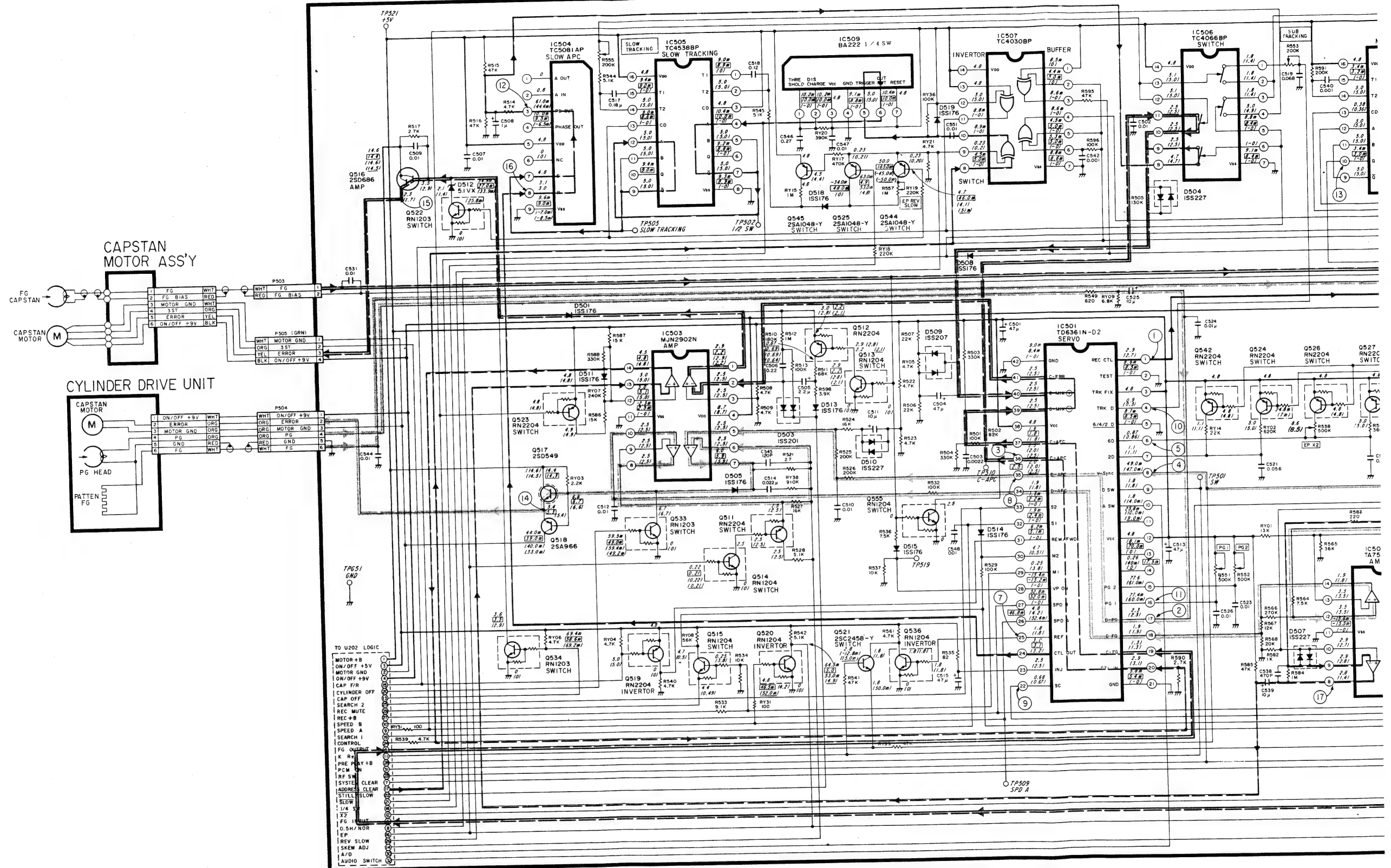


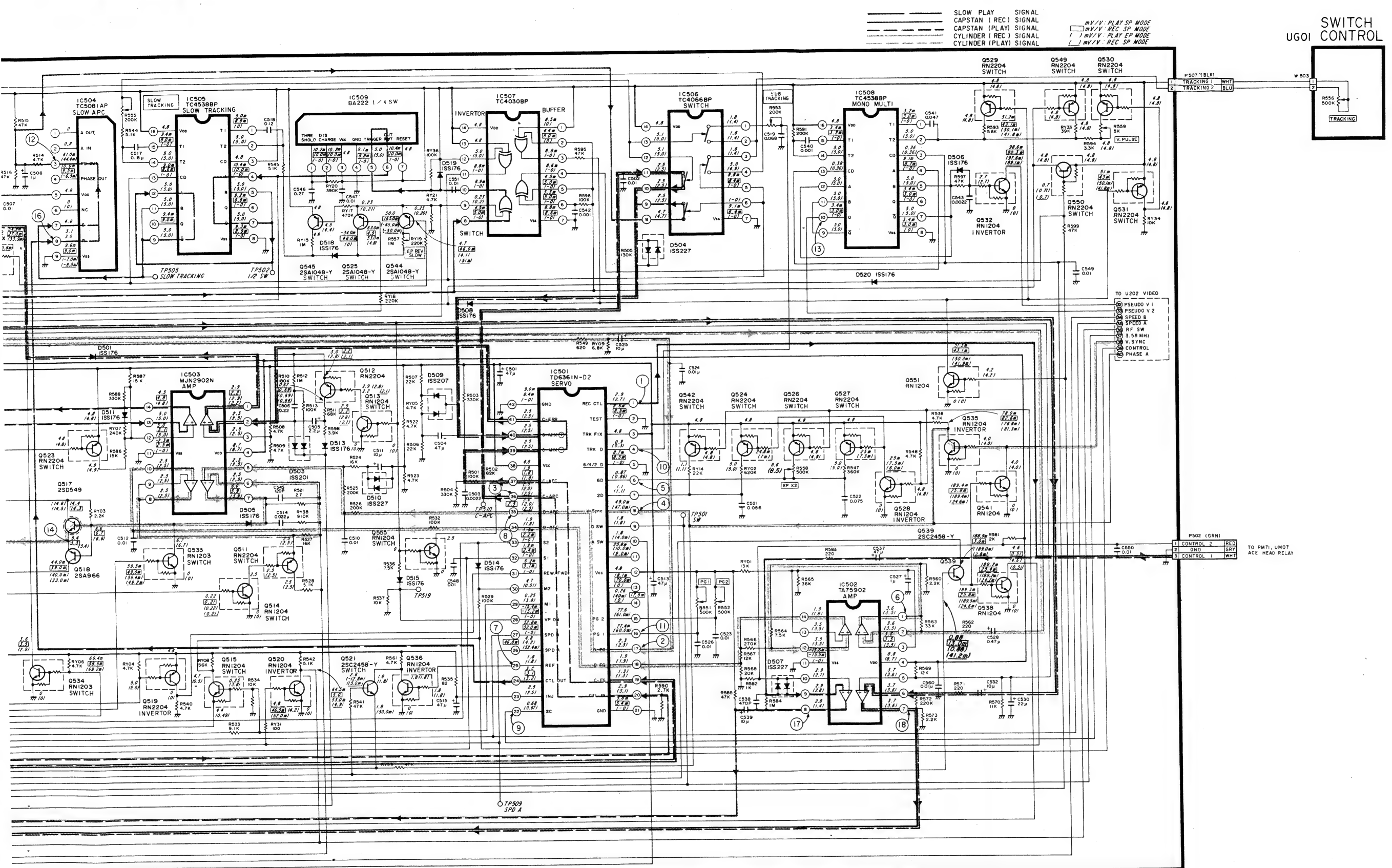




# 12-3. Servo Circuit

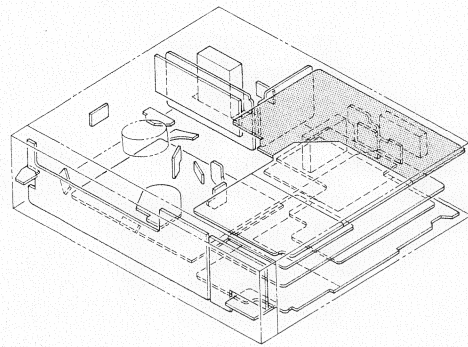
U202 SERVO







# 13-2. Video PC Board



U202 Main (Video) PC Board

U103 Sub Video PC Board

To UU01 Memory  
Control PC Board,  
PU01

P302  
6 - 1

To US01 PCM  
PC Board, PS03

P311  
2 1

To UV01 Pre Amp  
PC Board, PV02

P106  
11 - 1

To U803 Power 2  
PC Board, P808

P205  
4  
1  
1

To UEG  
PC Board

P303  
1 - 5

To U902 Hi-Fi  
Audio PC Board,  
P905

P206  
3 2 1

To UG01 Switch  
Control PC Board,  
W402

P204  
1  
2  
3

Test Connecto

P201  
1  
1  
6





V : PLAY SP

[V]: PLAY EP

(V): REC SP

&lt;V&gt;: REC EP

## Voltage and Location of Transistors

| Symbol No. | Voltage(Unit:V) |           |                | Location |
|------------|-----------------|-----------|----------------|----------|
|            | E               | C         | B              |          |
| Q102       | 1.6 (0)         | 3.4 (0)   | 2.2 (0)        | E-6      |
| Q103       | 2.2 (0)         | 0 (0)     | 1.6 (0)        | F-6      |
| Q104       | 2.8 (0)         | 0 (0)     | 2.1 (0)        | F-5      |
| Q105       | —               | —         | —              | F-5      |
| Q106       | 0 (0)           | 2.7 (0)   | 0 (0)          | F-6      |
| Q107       | 1.4 (0)         | 5.0 (0)   | 2.1 (0)        | E-5      |
| Q109       | 0 (0)           | 0 (0)     | 0 (0)          | E-6      |
| Q110       | 0 (0)           | 0 (0)     | 5.0 (0)        | E-5      |
| Q204       | 0 (0)           | 0 (0)     | 0.5 (0.5)      | F-5      |
| Q206       | 0 (0)           | 0 (0)     | 0(0)[4.4]<4.4> | D-9      |
| Q209       | 0.6 (2.4)       | 0 (0)     | 1.6(1.7)       | E-8      |
| Q210       | 0 (0)           | 0 (0)     | 5.0 (0)        | F-7      |
| Q211       | 2.2 (2.4)       | 5.1 (5.1) | 0.6 (0.6)      | E-7      |
| Q212       | 9.1 (9.0)       | 8.9 (0)   | 0 (8.9)        | D-7      |
| Q213       | 0 (0)           | 0 (8.9)   | 5.0 (0)        | D-7      |
| Q214       | 2.2 (0)         | 0 (0)     | 1.5 (0)        | C-7      |
| Q216       | 2.3 (2.4)       | 0 (0)     | 1.6 (1.7)      | E-9      |
| Q217       | 1.3 (0)         | 4.1 (4.2) | 2.0 (0)        | D-7      |
| Q218       | 3.5 (3.6)       | 5.1 (5.1) | 4.1 (4.2)      | E-7      |
| Q219       | 0 (2.5)         | 0.1 (5.1) | 0 (2.8)        | G-6      |
| Q221       | 0 (0)           | 2.0 (0)   | 0.7 (0)        | E-7      |
| Q304       | 4.3 (4.3)       | 0 (0)     | 3.6 (3.6)      | D-10     |
| Q305       | 2.5[2.6](2.6)   | 0 (0)     | 1.9 (1.9)      | C-10     |
| Q306       | 1.9 (1.9)       | 7.2 (7.2) | 2.5 (2.5)      | C-10     |
| Q307       | 5.1 (5.1)       | 4.9 (4.9) | 3.0            | D-11     |
| Q308       | 4.3 (4.3)       | 9.1 (9.0) | 4.9 (4.9)      | D-11     |
| Q309       | 4.0 (4.0)       | 4.9 (4.9) | 3.0            | D-11     |
| Q310       | 2.3 (2.3)       | 4.9 (4.9) | 3.0            | D-11     |
| Q312       | 5.1 (5.1)       | 5.1 (5.1) | 0.1 (0.1)      | C-11     |
| Q313       | 4.0 (4.0)       | 5.1 (5.1) | 4.7 (4.7)      | D-12     |
| Q314       | 5.1 (5.1)       | 2.3 (2.3) | 5.1 (5.1)      | D-11     |
| Q315       | 2.3 (2.3)       | 5.1 (5.1) | 0.1 (0.1)      | D-12     |
| Q316       | 0 (0)           | 6.2 (6.1) | 0 (0)          | C-11     |
| Q317       | 3.7 (3.7)       | 5.1 (5.1) | 3.2 (3.2)      | D-12     |
| Q318       | 1.5 (1.6)       | 0 (0)     | 0.8 (0.9)      | E-11     |
| Q322       | 0 (0)           | 0 (0)     | 0 (0)          | C-8      |
| Q323       | 0 (0)           | 0 (0)     | 0 (0)          | C-8      |
| Q324       | 0 (0)           | 0 (0)     | 0 (0)          | C-8      |
| Q325       | 0 (0)           | 0 (0)     | 0 (0)          | C-8      |
| Q326       | 2.8 (2.9)       | 5.1 (5.1) | 3.5 (3.5)      | D-8      |
| Q330       | 0 (0)           | 0 (0)     | 0 (0)          | D-10     |
| Q331       | 0 (0)           | 0 (0)     | 0 (0)          | D-10     |
| Q370       | 0 (0)           | 3.2 (3.2) | 0.7 (0.7)      | A-10     |
| Q371       | 2.7 (2.7)       | 5.1 (5.1) | 3.2 (3.2)      | A-10     |
| Q374       | 0.7 (0.7)       | 0 (0)     | 0 (0)          | A-9      |
| Q375       | 2.1 (0)         | 0 (0)     | 1.4 (1.4)      | B-9      |
| Q403       | 4.6 (4.6)       | 5.1 (5.1) | 5.1 (5.1)      | C-5      |
| Q404       | 2.6 (2.6)       | 5.1 (5.1) | 3.4 (3.4)      | D-6      |
| Q405       | 3.5 (3.5)       | 0         | 2.8 (2.8)      | C-5      |
| Q406       | 2.1 (1.4)       | 0 (0)     | 1.5 (0.7)      | E-6      |
| Q407       | 0 (0)           | 5.1 (5.1) | 0 (0)          | E-5      |
| Q408       | 0 (0)           | 4.3 (4.3) | 0 (0)          | E-11     |
| Q409       | 0 (0)           | 0 (0)     | 5.0 (0)        | E-11     |
| Q411       | 0[4.4](0)<4.4>  | 5.1       | 0[5.0](0)<5.1> | F-6      |
| Q415       | 0.1 (5.1)       | 5.1 (5.1) | 0 (5.9)        | F-6      |
| Q416       | 3.3 (3.3)       | 0 (0)     | 2.6 (2.6)      | C-6      |

## Location of Diodes

| Symbol No. | Location |
|------------|----------|
| D201       | D-10     |
| D202       | E-10     |
| D203       | C-9      |
| D205       | C-7      |
| D206       | F-7      |
| D207       | F-6      |
| D208       | D-8      |
| D303       | D-10     |
| D304       | D-10     |
| D307       | D-12     |
| D308       | D-11     |
| D403       | D-6      |
| D404       | D-7      |
| D405       | F-7      |

## Location of adjusting VR's

| Symbol No. | Location |
|------------|----------|
| R251       | E-10     |
| R252       | E-10     |
| R253       | E-10     |
| R254       | D-10     |
| R255       | D-9      |
| R256       | E-7      |
| R257       | C-7      |
| R351       | D-11     |
| R451       | E-6      |
| R454       | E-6      |
| R455       | D-5      |
| R559       | C-8      |

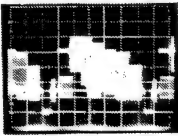


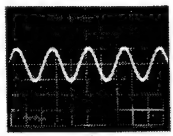


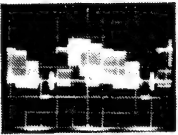


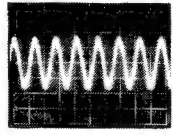
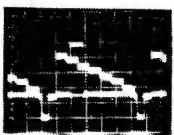

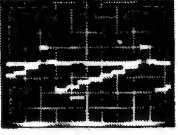
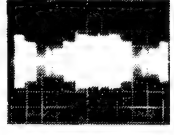
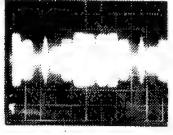
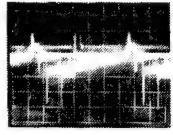
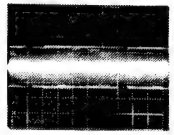
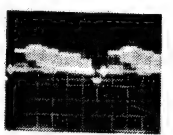
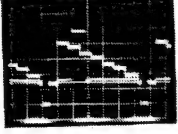
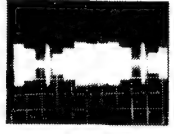


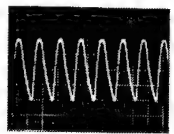





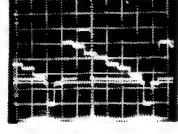
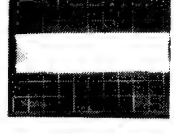

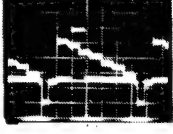
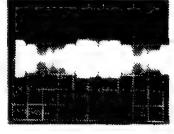
## Location of IC's

| Symbol No. | Location |
|------------|----------|
| IC101      | F-5      |
| IC201      | E-9      |
| IC202      | D-9      |
| IC203      | C-6      |
| IC301      | C-11     |
| IC302      | D-11     |
| IC401      | D-5      |
| IC402      | E-7      |



## Record Mode

## Playback Mode

|                                                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                                                      |                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>① TP206</p>  <p>V: 0.2V/div.<br/>H: 20<math>\mu</math>s/div. C-7</p>           | <p>⑦ TP213</p>  <p>V: 1V/div.<br/>H: 20<math>\mu</math>s/div. A-16</p>             | <p>⑬ TP202</p>  <p>V: 0.1V/div.<br/>H: 5ms/div. D-18</p>                          | <p>⑲ IC401, Pin ⑭</p>  <p>V: 0.2V/div.<br/>H: 100ns/div. B-14</p>                 | <p>⑳ Q374, Emitter</p>  <p>V: 50mV/div.<br/>H: 10<math>\mu</math>s/div. D-2</p>   | <p>⑳ IC201, Pin ⑧</p>  <p>V: 0.2V/div.<br/>H: 10<math>\mu</math>s/div. D-9</p>   |
| <p>② TP204</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. D-6</p>           | <p>⑧ IC401, Pin ⑳</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. D-13</p>    | <p>⑭ Q104, Emitter</p>  <p>V: 0.5V/div.<br/>H: 5ms/div. E-15</p>                  | <p>⑳ TP208</p>  <p>V: 0.1V/div.<br/>H: 200ns/div. C-17</p>                        | <p>⑳ IC202, Pin ⑥</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. G-10</p>   | <p>⑳ TP204</p>  <p>V: 0.5V/div.<br/>H: 10<math>\mu</math>s/div. D-6</p>          |
| <p>③ TP209</p>  <p>V: 0.5V/div.<br/>H: 10<math>\mu</math>s/div. E-15</p>         | <p>⑨ IC401, Pin ⑳</p>  <p>V: 0.2V/div.<br/>H: 10<math>\mu</math>s/div. D-12</p>   | <p>⑮ IC401, Pin ⑳</p>  <p>V: 50mV/div.<br/>H: 10<math>\mu</math>s/div. D-13</p>  | <p>⑳ Q218, Emitter</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. F-15</p> | <p>⑳ TP211 (Y comb)</p>  <p>V: 0.5V/div.<br/>H: 10<math>\mu</math>s/div. G-9</p> | <p>⑳ Q317, Emitter</p>  <p>V: 0.2V/div.<br/>H: 10<math>\mu</math>s/div. G-6</p> |
| <p>④ IC202, Pin ③</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. G 10</p> | <p>⑩ IC401, Pin ⑮</p>  <p>V: 0.5V/div.<br/>H: 10<math>\mu</math>s/div. C-14</p>  | <p>⑮ TP203</p>  <p>V: 1V/div.<br/>H: 5ms/div. D-18</p>                          | <p>⑳ IC202, Pin ⑩</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. G-9</p>  | <p>⑳ Q403, Emitter</p>  <p>V: 0.2V/div.<br/>H: 100ns/div. B-12</p>              |                                                                                                                                                                     |
| <p>⑤ TP205</p>  <p>V: 0.2V/div.<br/>H: 10<math>\mu</math>s/div. C-8</p>         | <p>⑪ TP401 (Rec-C)</p>  <p>V: 50mV/div.<br/>H: 10<math>\mu</math>s/div. B-16</p> | <p>⑰ IC401, Pin ④</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. B-13</p> | <p>⑳ IC202, Pin ⑪</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. G-9</p>  | <p>⑳ IC402, Pin ④</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. F-14</p> |                                                                                                                                                                     |
| <p>⑥ IC210, Pin ⑳</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. B-10</p> | <p>⑫ TP201 (Rec-Y)</p>  <p>V: 0.5V/div.<br/>H: 10<math>\mu</math>s/div. B-9</p>  | <p>⑱ IC401, Pin ②</p>  <p>V: 1V/div.<br/>H: 20<math>\mu</math>s/div. B-12</p>   | <p>⑳ IC201, Pin ⑥</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. D-9</p>  | <p>⑳ IC402, Pin ②</p>  <p>V: 0.1V/div.<br/>H: 10<math>\mu</math>s/div. F-13</p> |                                                                                                                                                                     |

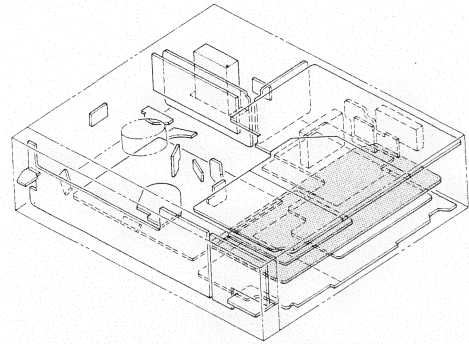
## U202 VIDEO



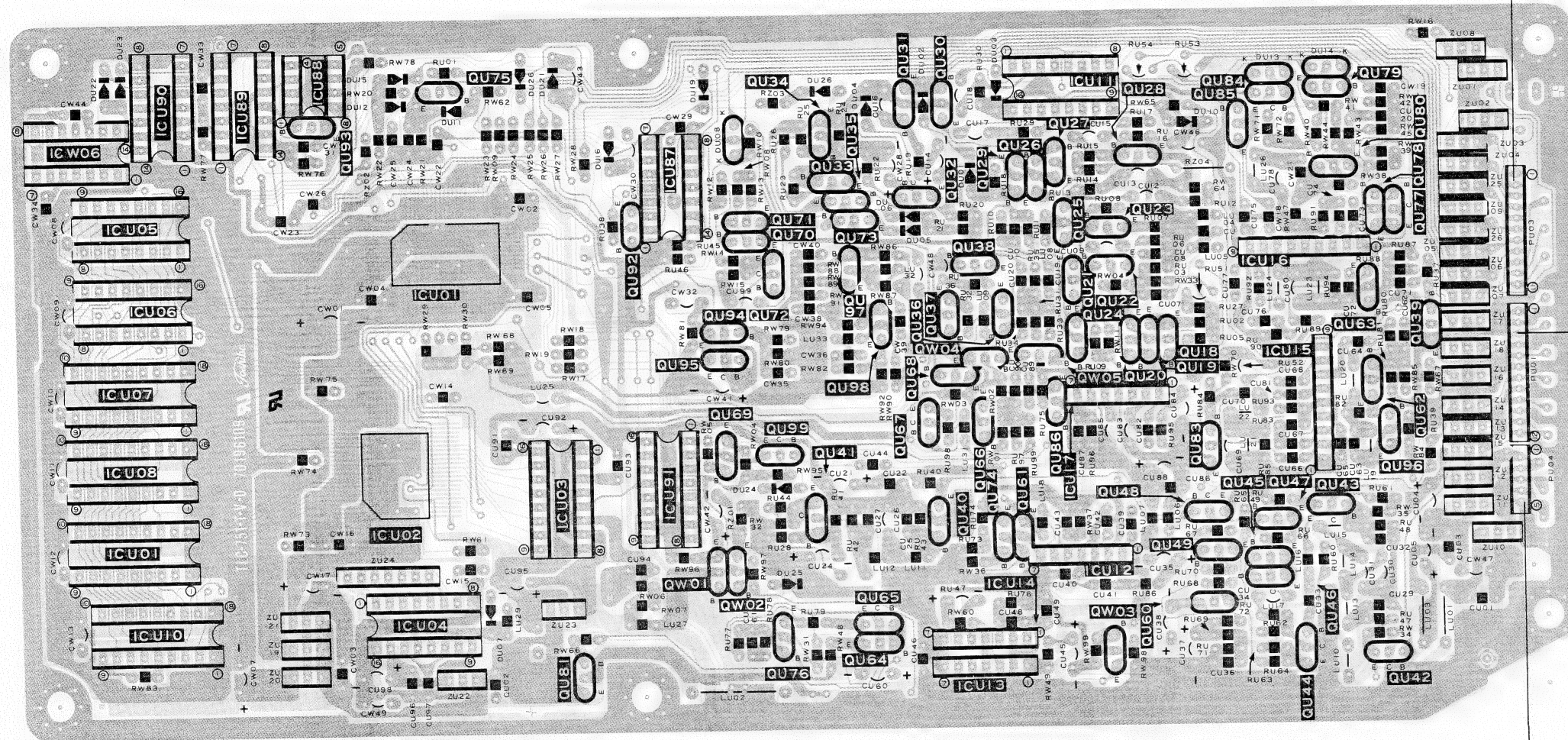




# 14-2. Memory Control PC Board



UU01 Memory Control PC Board  
(Bottom View)



PU03  
1  
11  
→ To U902 Sub  
Logic PC Board,  
P629

PU01  
1  
12  
→ To U202 Main  
PC Board, P302  
1  
6  
→ To U202 Main  
PC Board, P302  
7  
12  
→ To U202 Main  
PC Board, P301

PU04  
1  
2  
3  
→ To U803 Power 2  
PC Board, P805

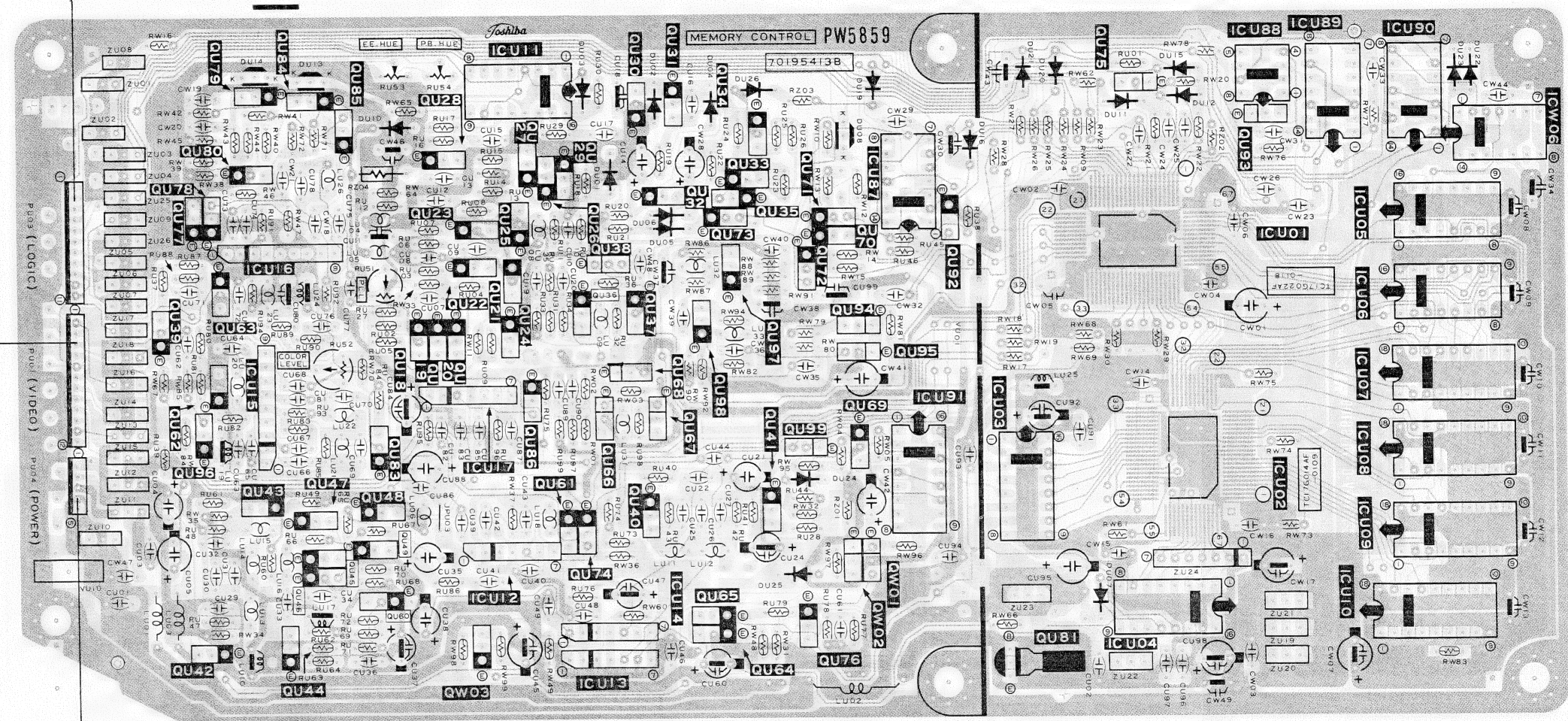
A  
B  
C  
D  
E  
F  
G



A  
B  
C  
D  
E  
F  
G

PU03  
1  
11  
To U902 Sub  
Logic PC Board,  
P629

UU01 Memory Control PC Board  
(Top View)



To U202 Main  
PC Board, P302

To U202 Main  
PC Board, P302

To U202 Main  
PC Board, P301

To U202 Main  
PC Board, P301

PU04  
1  
2  
3  
To U803 Power 2  
PC Board, P805



V : EE MULTI STILL  
(V): EE MUTLI SERIES  
[V]: PLAYBACK STILL

Voltage and Location of Transistors

| Symbol No. | Voltage(Unit:V)           |                             |                             | Location |
|------------|---------------------------|-----------------------------|-----------------------------|----------|
|            | E                         | C                           | B                           |          |
| QU18       | 8.2(8.2) [8.2]            | 0.02(0.02) [0.01]           | 7.5(7.5) [7.5]              | D-4      |
| QU19       | 8.2(8.2) [8.2]            | 5.8(5.8) [5.8]              | 7.8(7.8) [7.9]              | D-4      |
| QU20       | 5.8(5.8) [5.8]            | 7.8(7.8) [7.9]              | 6.4(6.4) [6.5]              | D-5      |
| QU21       | 7.2(7.2) [7.3]            | 8.6(8.6) [8.6]              | 7.8(7.8) [7.9]              | D-5      |
| QU22       | 2.2(2.2) [1.7]            | 5.8(5.8) [5.8]              | 2.9(2.9) [2.4]              | D-5      |
| QU23       | 2.2(2.2) [1.7]            | 7.2(7.2) [7.3]              | 2.9(2.9) [2.4]              | C-5      |
| QU24       | 7.2(7.2) [7.3]            | 8.5(8.5) [8.5]              | 7.8(7.8) [7.9]              | D-5      |
| QU25       | 2.9(2.9) [2.4]            | 8.6(8.6) [8.6]              | 3.4(3.4) [2.9]              | D-5      |
| QU26       | 3.4(3.4) [3.0]            | 3.5(3.5) [3.1]              | 0.2(0.2) [0.2]              | C-5      |
| QU27       | 3.5(3.5) [3.1]            | 3.4(3.4) [3.0]              | 0.2(0.2) [0.2]              | C-5      |
| QU28       | 0.02(0.02) (0.01)         | 0.2(0.2) [0.2]              | 0.7(0.7) [0.7]              | C-5      |
| QU29       | 3.5(3.5) [3.1]            | 8.6(8.6) [8.6]              | 4.1(4.1) [3.6]              | C-6      |
| QU30       | 3.5(3.5) [3.1]            | 0.02(0.02) [0.01]           | 3.0(3.0) [2.5]              | C-6      |
| QU31       | 3.0(3.0) [2.5]            | 0.02(0.02) [0.01]           | 2.3(2.3) [1.8]              | C-6      |
| QU32       | 2.3(2.3) [1.8]            | 8.6(8.6) [8.6]              | 0.6(0.6 or 1.0)<br>(0.6)    | C-6      |
| QU33       | 2.3(2.3) [1.8]            | 8.6(8.6) [8.6]              | 2.9(2.3 or 2.9)<br>(2.4)    | C-6      |
| QU34       | 0.02(0.02) [0.01]         | 2.9(2.3 or 2.9)<br>[2.4]    | 0.06(0.06 or 0.2)<br>[0.06] | C-7      |
| QU35       | 0.02(0.02) (0.01)         | 0.06(0.06 or 1.6)<br>[0.06] | 4.8(3.7 or 4.8)<br>[4.8]    | C-6      |
| QU36       | 7.3(7.3) [7.3]            | 0 (0) (0)                   | 6.7 (6.7) [6.7]             | D-6      |
| QU37       | 7.3(7.3) [7.3]            | 5.4(5.4) [5.4]              | 6.7(6.7) [6.7]              | D-6      |
| QU38       | 5.4(5.4) [5.4]            | 2.3(2.3) [2.3]              | 4.7(4.7) [4.7]              | D-6      |
| QU39       | 0 (0) [0]                 | 0.07(0.07) [0.07]           | 1.9 (1.9) [1.9]             | D-3      |
| QU40       | 1.7 (1.7) [1.7]           | 0 (0) [0]                   | 1.1(1.1) [1.1]              | E-6      |
| QU41       | 2.7 (2.7) [2.7]           | 1.1 (1.1) [1.1]             | 2.1 (2.1) [2.1]             | E-6      |
| QU42       | 2.2 (2.2) [2.3]           | 0 (0) [0]                   | 1.6 (1.6) [1.7]             | F-3      |
| QU43       | 2.9 (2.9) [2.9]           | 5.7 (5.7) [5.7]             | 3.5 (3.5) [3.6]             | E-4      |
| QU44       | 2.2 (2.2) [2.2]           | 6.5 (6.5) [6.5]             | 2.9 (2.9) [2.9]             | F-4      |
| QU45       | 1.5 (1.5) [1.6]           | 8.7 (8.7) [8.7]             | 0.1 (0.1) [0.2]             | E-4      |
| QU46       | 1.5 (1.5) [1.6]           | 8.7 (8.7) [8.7]             | 2.2 (2.2) [0.06]            | F-4      |
| QU47       | 0 (0) (0)                 | 0.1 (0.1) [0.2]             | 0.7 (0.7) [0.06]            | E-4      |
| QU48       | 0 (0) (0)                 | 2.2 (2.2) [0.06]            | 0.3 (0.3) [4.8]             | E-5      |
| QU49       | 2.8 (2.8) [2.8]           | 1.0 (1.0) [1.0]             | 2.1 (2.1) [2.1]             | E-5      |
| QU60       | 1.7 (1.7) [1.7]           | 0 (0) [0]                   | 1.0 (1.0) [1.0]             | F-5      |
| QU61       | 1.9 (1.9) [1.9]           | 8.7 (8.7) [8.7]             | 2.6 (2.6) [2.6]             | E-5      |
| QU62       | 2.4(2.4) [2.4]            | 8.7 (8.7) [8.7]             | 3.0 (3.0) [3.0]             | E-3      |
| QU63       | 5.2 (5.2) [5.2]           | 8.7 (8.7) [8.7]             | 5.8 (5.8) [5.8]             | D-4      |
| QU64       | 4.2 (4.2) [4.3]           | 4.8 (4.8) [4.8]             | 4.5 (4.5) [4.5]             | F-6      |
| QU65       | 3.8 (3.8) [3.8]           | 4.8 (4.8) [4.8]             | 4.5 (4.5) [4.5]             | E-6      |
| QU66       | 7.3 (7.3) [7.3]           | 0 (0) (0)                   | 6.7 (6.7) [6.7]             | E-6      |
| QU67       | 7.3 (7.3) [7.3]           | 5.4 (5.4) [5.4]             | 6.7 (6.7) [6.7]             | E-6      |
| QU68       | 5.4 (5.4) [5.4]           | 2.6 (2.6) [2.6]             | 4.7 (4.7) (4.7)             | D-6      |
| QU69       | 3.6 (3.6) [3.6]           | 4.8 (4.8) [4.8]             | 4.2 (4.3) [4.3]             | E-7      |
| QU70       | 0 (0) [0]                 | 0.01( 0.02or0.08)<br>[0.2]  | 0.6 (0.6) [0.6]             | D-7      |
| QU71       | 0 (0) [0]                 | 4.0 (4.0) [3.9]             | 0.01(0.02or0.08)<br>[0.2]   | D-7      |
| QU72       | 4.2 (4.2) [4.2]           | 4.7 (4.7) [4.7]             | 4.7 (4.7 or 3.7)<br>[4.8]   | D-7      |
| QU73       | 0.5 (0.5 or 0.8)<br>[0.5] | 0.01(0.01) [0.01]           | 2.0 (2.0) [2.0]             | D-6      |
| QU74       | 0 (0) (0)                 | 2.6 (2.6) [2.6]             | 0.07(0.07) [0.07]           | E-5      |
| QU75       | 4.3 (2.4) [4.3]           | 4.7 (4.7) [4.7]             | 4.6 (0) [4.7]               | C-8      |

| Symbol No. | Voltage(Unit:V)   |                 |                   | Location |
|------------|-------------------|-----------------|-------------------|----------|
|            | E                 | C               | B                 |          |
| QU76       | 4.5 (4.5) [4.5]   | 0 (0) [0]       | 3.8 (3.8) [3.8]   | F-7      |
| QU77       | 0 (0) [0]         | 0 (0) [8.6]     | 7.2 (7.2) [0.1]   | C-3      |
| QU78       | 0 (0) [0]         | 7.2 (7.2) [0.1] | 0.3 (0.3) [4.8]   | C-3      |
| QU79       | 3.7 (3.7) [3.7]   | 8.7 (8.7) [8.7] | 4.4 (4.4) (4.3)   | C-4      |
| QU80       | 4.4 (4.4) [4.4]   | 8.7 (8.7) [8.7] | 5.1 (5.1) [5.1]   | C-3      |
| QU81       | 4.7 (4.7) [4.7]   | 4.8 (4.8) [4.8] | 5.5 (5.5) [5.5]   | F-8      |
| QU83       | 0.6 (0.6) [0.6]   | 0 (0) [0]       | 0 (0) [1.4]       | E-4      |
| QU84       | 2.9 (2.9) [2.1]   | 0 (0) [0]       | 2.3 (2.3) [1.4]   | C-4      |
| QU85       | 1.7 (1.7) [1.7]   | 0 (0) [0]       | 1.1 (1.1) [1.1]   | C-4      |
| QU86       | 2.3 (2.3) [2.3]   | 4.8 (4.8) [4.8] | 2.8 (2.8) [2.8]   | E-5      |
| QU92       | 0 (0) [0]         | 0 (0) [0]       | 4.1 (4.1) [3.9]   | D-7      |
| QU93       | 0 (0) [0]         | 2.2 (2.2) [2.2] | 2.6 (2.6) [2.6]   | C-9      |
| QU94       | 0.79 (0.79) [2.4] | 4.8 (4.8) [4.8] | 1.19 (1.19) (3.0) | D-7      |
| QU95       | 0.79 (0.79) [2.4] | 4.8 (4.8) [4.8] | 1.3 (1.3) [1.3]   | D-7      |
| QU96       | 3.6 (3.6) [3.6]   | 0 (0) [0]       | 3.0 (3.0) [3.0]   | E-3      |
| QU97       | 2.0 (2.0) [2.0]   | 3.5 (3.5) [3.5] | 2.6 (2.6) [2.6]   | D-6      |
| QU98       | 1.3 (1.3) [1.3]   | 3.5 (3.5) [3.5] | 1.9 (1.9) [1.9]   | D-6      |
| QU99       | 4.8 (4.8) [4.8]   | 4.8 (4.8) [4.8] | 0.02(0.02) [0.02] | E-7      |
| QW01       | 4.2 (4.2) [4.3]   | 4.8 (4.8) [4.8] | 4.5 (4.5) [4.5]   | E-7      |
| QW02       | 2.2 (2.2) [2.3]   | 0 (0) [0]       | 1.6 (1.6) [1.7]   | E-7      |
| QW03       | 1.6 (1.6) [1.6]   | 8.7 (8.7) [8.7] | 2.2 (2.2) [2.3]   | F-5      |
| QW04       | —                 | —               | —                 | D-6      |
| QW05       | —                 | —               | —                 | D-5      |

Location of Diodes

| Symbol No. | Location |
|------------|----------|
| DU01       | C-6      |
| DU02       | C-6      |
| DU03       | C-5      |
| DU04       | C-6      |
| DU05       | D-6      |
| DU06       | C-6      |
| DU07       | F-8      |
| DU10       | C-4      |
| DU11       | C-8      |
| DU12       | C-9      |
| DU13       | C-4      |
| DU14       | C-4      |
| DU15       | C-9      |
| DU16       | C-7      |
| DU19       | C-7      |
| DU20       | C-8      |
| DU21       | C-8      |
| DU22       | C-10     |
| DU23       | C-10     |
| LD24       | E-7      |
| DU25       | E-6      |
| DU26       | C-6      |

Location of IC's

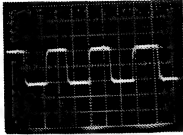
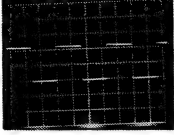
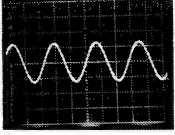

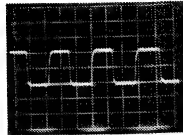
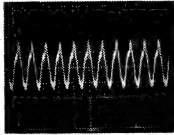
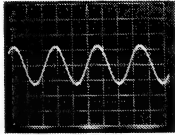
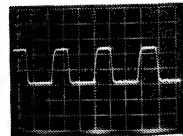

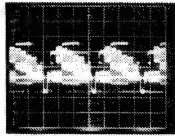
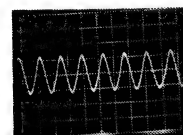
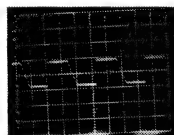

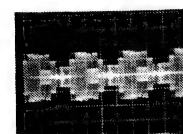
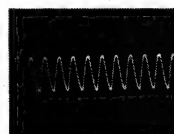
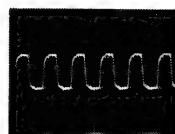

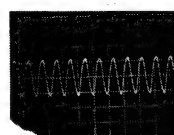
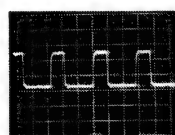
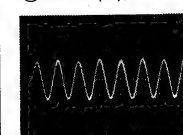
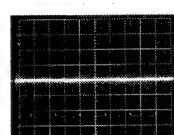

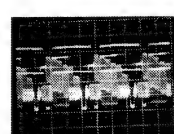
| Symbol No. | Location |
|------------|----------|
| ICU01      | D-8      |
| ICU02      | E-8      |
| ICU03      | E-8      |
| ICU04      | F-8      |
| ICU05      | D-10     |
| ICU06      | D-10     |
| ICU07      | D-10     |
| ICU08      | E-10     |
| ICU09      | E-10     |
| ICU10      | F-10     |
| ICU11      | C-5      |
| ICU12      | E-5      |
| ICU13      | F-6      |
| ICU14      | E-5      |
| ICU15      | D-4      |
| ICU16      | D-4      |
| ICU17      | E-5      |
| ICU87      | C-7      |
| ICU88      | C-9      |
| ICU89      | C-9      |
| ICU90      | C-10     |
| ICU91      | E-7      |
| ICW06      | C-10     |

Location of adjusting VR's

| Symbol No. | Location |
|------------|----------|
| RU51       | D-4      |
| RU52       | D-4      |
| RU53       | C-4      |
| RU54       | C-5      |

## EE Mode Multi Scan

## PB Mode

|                                                                                                                                                        |                                                                                                                                                      |                                                                                                                                                           |                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>① ICU01, Pin ⑤ (PL) D-20</p>  <p>V: 2V/div.<br/>H: 0.1μs/div.</p>  | <p>⑨ ZU03 B-2</p>  <p>V: 2V/div.<br/>H: 10ms/div.</p>               | <p>⑰ QU83, Emitter F-5</p>  <p>V: 200mV/div.<br/>H: 0.2μs/div.</p>      | <p>⑳ ICU01, Pin ① B-20</p>  <p>V: 2V/div.<br/>H: 10ms/div.</p> |
| <p>② ICU01, Pin ⑤ (CAS) D-20</p>  <p>V: 2V/div.<br/>H: 0.1μs/div.</p> | <p>⑩ QU25, Base C-13</p>  <p>V: 50mV/div.<br/>H: 50ns/div.</p>      | <p>⑱ QU80, Emitter F-6</p>  <p>V: 200mV/div.<br/>H: 0.2μs/div.</p>      |                                                                                                                                                   |
| <p>③ ICU01, Pin ⑤ (RAS) D-20</p>  <p>V: 2V/div.<br/>H: 0.1μs/div.</p> | <p>⑪ QU28, Collector C-14</p>  <p>V: 2V/div.<br/>H: 20μs/div.</p>   | <p>⑲ ICU04, Pin ⑫ G-7</p>  <p>V: 200mV/div.<br/>H: 20μs/div.</p>        |                                                                                                                                                   |
| <p>④ PU01, Pin ③ F-2</p>  <p>V: 100mV/div.<br/>H: 0.2μs/div.</p>    | <p>⑫ QU30, Emitter B-14</p>  <p>V: 2V/div.<br/>H: 20μs/div.</p>   | <p>⑳ QU46, Emitter D-6</p>  <p>V: 100mV/div.<br/>H: 20μs/div.</p>     |                                                                                                                                                   |
| <p>⑤ PU01, Pin ⑤ F-2</p>  <p>V: 200mV/div.<br/>H: 20μs/div.</p>     | <p>⑬ QU38, Collector C-16</p>  <p>V: 1V/div.<br/>H: 50ns/div.</p> | <p>㉑ ICU01, Pin ④ (SPCK) D-20</p>  <p>V: 2V/div.<br/>H: 50ns/div.</p> |                                                                                                                                                   |
| <p>⑥ QU42, Base D-4</p>  <p>V: 200mV/div.<br/>H: 20μs/div.</p>      | <p>⑭ QU68, Collector D-17</p>  <p>V: 1V/div.<br/>H: 50ns/div.</p> | <p>㉒ ICU01, Pin ⑤ (PS) D-20</p>  <p>V: 2V/div.<br/>H: 0.1μs/div.</p>  |                                                                                                                                                   |
| <p>⑦ CU43 (+) D-11</p>  <p>V: 100mV/div.<br/>H: 0.2μs/div.</p>      | <p>⑮ ICU01, Pin ② B-20</p>  <p>V: 2V/div.<br/>H: 10ms/div.</p>    |                                                                                                                                                           |                                                                                                                                                   |
| <p>⑧ ZU13 G-2</p>  <p>V: 100mV/div.<br/>H: 20μs/div.</p>            | <p>⑯ ICU14, Pin ① D-14</p>  <p>V: 200mV/div.<br/>H: 20μs/div.</p> |                                                                                                                                                           |                                                                                                                                                   |

**A**

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**B**

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**C**

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**D**

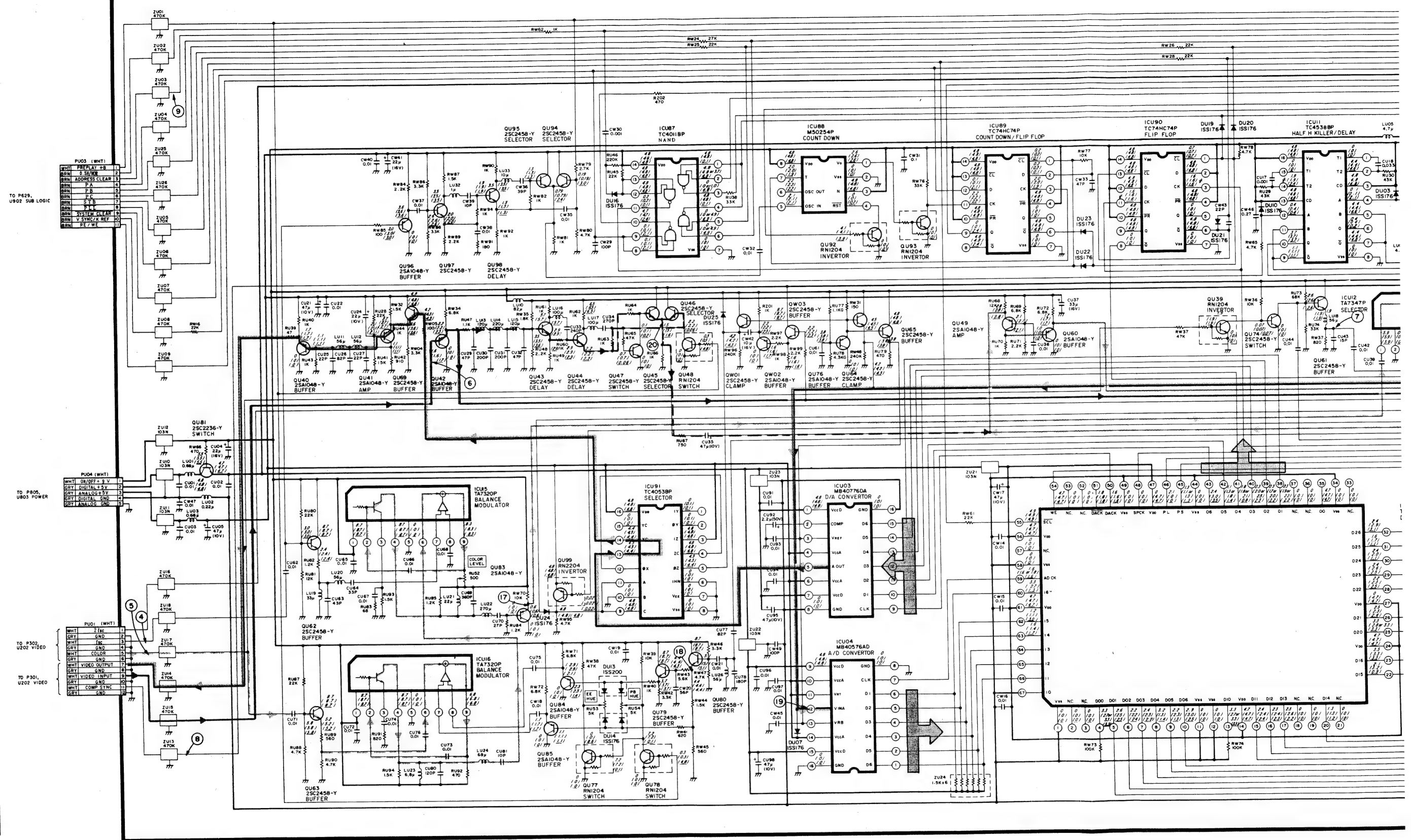
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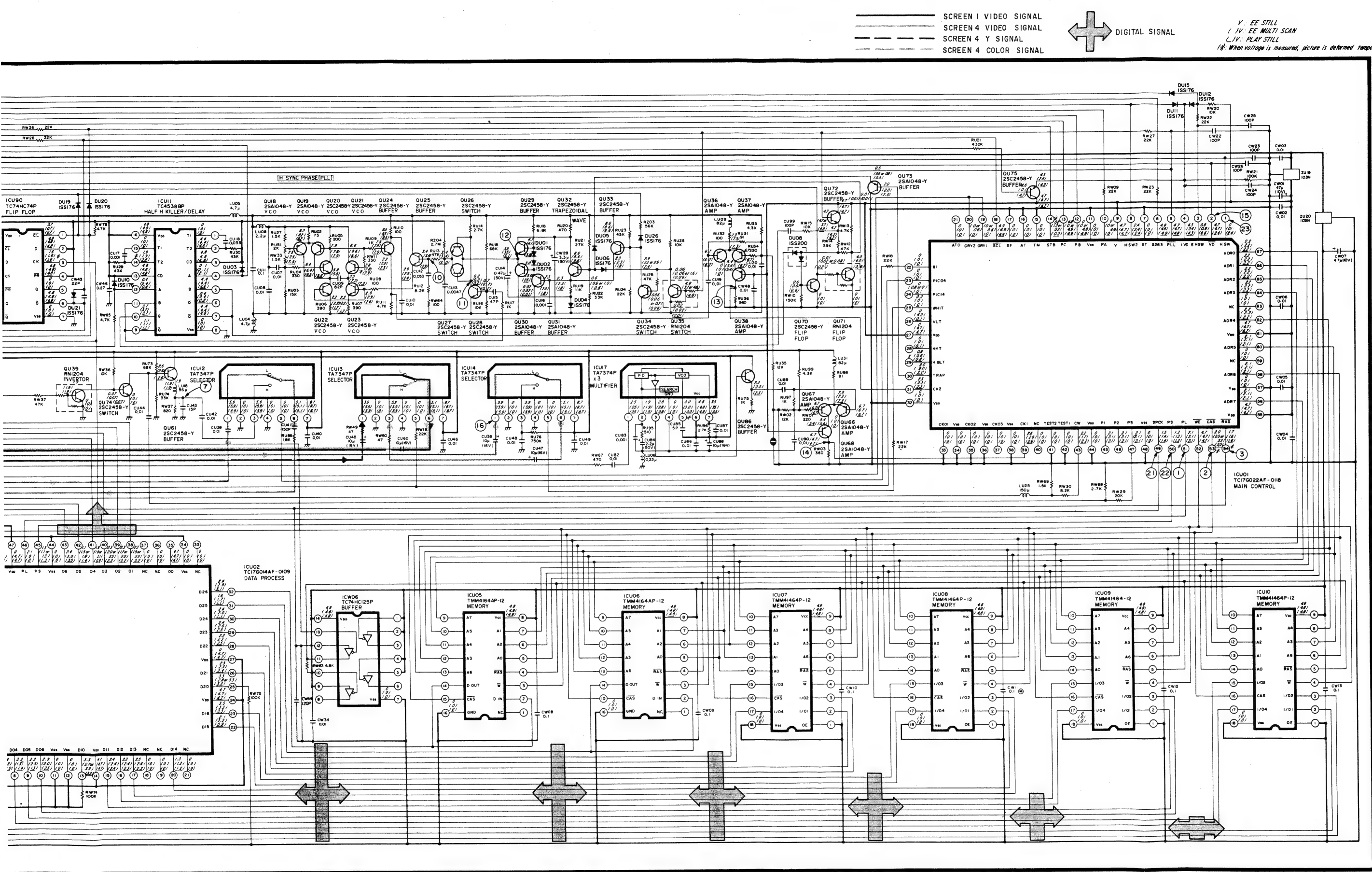
**E**

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**F**

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# A



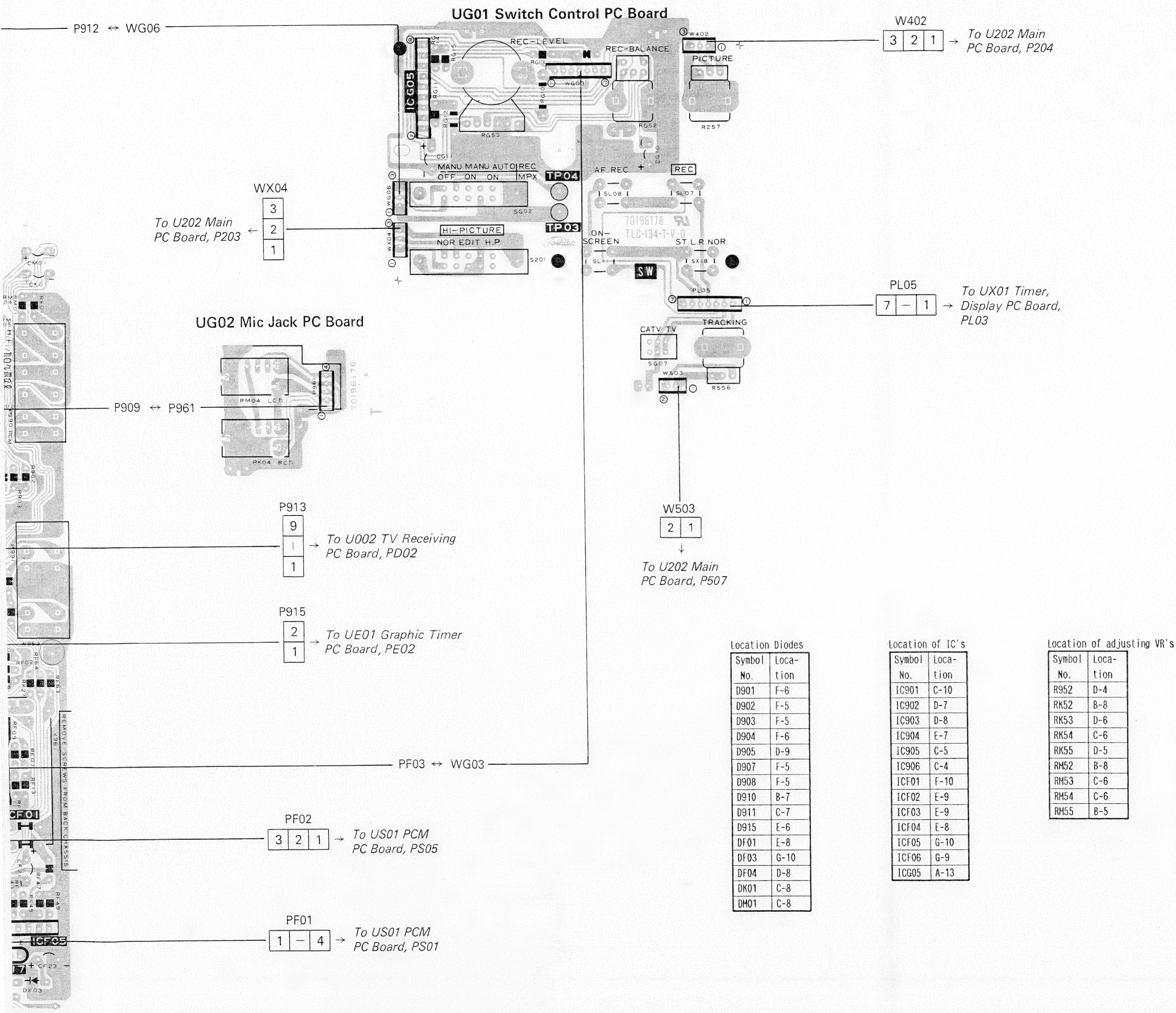
## C



3-110

**UG03 Headphone  
Jack PC Board**





Location Diodes

| Symbol No. | Location |
|------------|----------|
| D901       | F-6      |
| D902       | F-5      |
| D903       | F-5      |
| D904       | F-6      |
| D905       | D-9      |
| D907       | F-5      |
| D908       | F-5      |
| D910       | B-7      |
| D911       | C-7      |
| D915       | E-6      |
| DF01       | E-8      |
| DF03       | G-10     |
| DF04       | D-8      |
| DK01       | C-8      |
| DM01       | C-8      |

Location of IC's

| Symbol No. | Location |
|------------|----------|
| IC901      | C-10     |
| IC902      | D-7      |
| IC903      | D-8      |
| IC904      | E-7      |
| IC905      | C-5      |
| IC906      | C-4      |
| ICF01      | F-10     |
| ICF02      | E-9      |
| ICF03      | E-9      |
| ICF04      | E-8      |
| ICF05      | G-10     |
| ICF06      | G-9      |
| ICG05      | A-13     |

Location of adjusting VR's

| Symbol No. | Location |
|------------|----------|
| R952       | D-4      |
| RK52       | B-8      |
| RK53       | D-6      |
| RK54       | C-6      |
| RK55       | D-5      |
| RM52       | B-8      |
| RM53       | C-6      |
| RM54       | C-6      |
| RM55       | B-5      |

Voltage and Location of Transistors

| Symbol No. | Voltage(Unit:V) |               |             | Location |
|------------|-----------------|---------------|-------------|----------|
|            | E               | C             | B           |          |
| Q908       | 0 (0)           | 2.4 (2.4)     | 0 (0)       | D-9      |
| Q910       | 0 (0)           | 0 (2.7)       | 4.9 (0)     | E-6      |
| Q911       | 0.2 (0.2)       | 5.0 (5.0)     | 0.7 (0.7)   | F-6      |
| Q912       | 6.4 (6.4)       | 0 (0)         | 6.4 (6.4)   | F-6      |
| Q913       | 0 (0)           | 0 (0)         | 0 (0)       | F-6      |
| Q914       | 0 (0)           | 6.4 (6.4)     | 0 (0)       | F-5      |
| Q915       | 0 (0)           | 0 (0)         | 0 (0)       | F-5      |
| Q916       | 7.5 (7.5)       | 8.2 (8.2)     | 8.2 (8.2)   | F-7      |
| Q922       | 0 (1.3)         | 0 (0)         | 0 (0.7)     | E-5      |
| Q923       | 0 (1.3)         | 0 (1.3)       | 0 (0)       | D-5      |
| Q924       | 3.3 (0)         | 0 (0)         | 2.7 (0)     | E-4      |
| Q925       | 0 (0)           | 0 (0)         | 2.6 (0.4)   | E-4      |
| Q926       | 0 (6.5)         | 0 (8.1)       | 0 (7.2)     | F-4      |
| Q927       | -6.7 (-6.7)     | -6.1 (-6.1)   | 3.4 (3.4)   | E-6      |
| Q928       | -5.0 (-5.0)     | -12.6 (-12.6) | -5.6 (-5.6) | E-6      |
| Q929       | 4.1 (4.1)       | 5.0 (5.0)     | 4.8 (4.8)   | B-8      |
| Q930       | 3.5 (4.1)       | -2.3 (-5.0)   | 2.9 (3.9)   | B-7      |
| Q931       | 1.1 (0.5)       | 2.9 (3.9)     | 1.8 (0.9)   | D-5      |
| Q932       | 0 (0)           | 0 (0.5)       | 4.9 (0)     | D-5      |
| Q933       | 0 (0)           | 0 (0)         | 0 (0)       | C-8      |
| Q934       | 0 (0)           | 4.7 (0)       | 0 (0)       | C-8      |
| Q935       | 4.7 (0)         | 4.8 (4.8)     | 4.9 (0)     | B-7      |
| Q936       | 0 (0)           | 1.9 (1.9)     | 0 (0)       | B-5      |
| Q937       | 0 (0)           | 5.0 (5.0)     | 0 (0)       | D-8      |
| QK01       | 0 (0)           | 0 (0)         | 0 (2.7)     | B-6      |
| QK02       | 0 (0)           | 0 (0)         | 0 (2.7)     | B-6      |
| QK03       | 0 (0)           | 0 (0)         | 0 (0)       | F-6      |
| QK05       | 3.3 (3.3)       | 7.8 (7.8)     | 3.9 (3.9)   | F-8      |
| QK06       | 0 (0)           | 0 (0)         | -0.7 (-0.7) | C-8      |
| QK07       | 0 (0)           | 0 (0)         | 0 (0)       | D-5      |
| QK08       | 8.4 (8.4)       | -2.2 (-2.2)   | 7.8 (7.8)   | F-8      |
| QK09       | 5.0 (5.0)       | 0 (0)         | 5.0 (5.0)   | D-8      |
| QH01       | 0 (0)           | 0 (0)         | 0 (0)       | E-6      |
| QH02       | 0 (0)           | 0 (0)         | 0 (0)       | E-6      |
| QH03       | 0 (0)           | 0 (0)         | 0 (0)       | F-6      |
| QH05       | 3.3 (3.3)       | 7.8 (7.8)     | 3.9 (3.9)   | E-8      |
| QH06       | 0 (0)           | 0 (0)         | -0.7 (-0.7) | C-8      |
| QH07       | 0 (0)           | 0 (0)         | 0 (0)       | B-5      |
| QH08       | 8.4 (8.4)       | -2.2 (-2.2)   | 7.8 (7.8)   | F-8      |
| QH09       | 5.0 (5.0)       | 0 (0)         | 5.0 (5.0)   | D-8      |
| QF11       | 0 (0)           | 0 (0)         | 0 (0)       | F-9      |
| QF12       | 0 (0)           | 8.9 (8.9)     | 0 (0)       | F-9      |
| QF13       | 0 (0)           | 0 (0)         | 0 (0)       | E-8      |
| QF14       | 0 (0)           | 8.9 (8.9)     | 0 (0)       | F-9      |
| QF15       | 0 (0)           | 8.9 (8.9)     | 0 (0)       | E-9      |
| QF16       | 0 (0)           | 0 (0)         | 0 (0)       | G-10     |
| QF17       | 0 (0)           | 8.9 (8.9)     | 0 (0)       | G-10     |
| QF19       | 0 (0)           | 0 (0)         | 0 (0)       | G-8      |
| QF20       | 0 (0)           | 0 (0)         | 0 (0)       | G-8      |
| QF21       | 0 (0)           | 0 (0)         | 0 (0)       | F-8      |
| QF22       | 0 (0)           | 0 (0)         | 0 (0)       | D-9      |
| QF23       | 0 (0)           | 1.5 (1.5)     | 0 (0)       | C-7      |
| QF24       | 5.0 (5.0)       | 5.0 (5.0)     | 0 (0)       | C-7      |

Voltage values in the table above are measured under the condition as follows.

- Input selector SW: TV
- Rec level/MPX SW: AUTO/ON
- Audio selector SW: STEREO
- Level meter select SW: LEVEL
- PCM selector SW: Hi-Fi
- PCM selector SW: VCR

## 15-3. Hi-Fi Audio Data

### 1) CONTROL TERMINAL VOLTAGE OF INPUT SELECTOR IC, IC901 (TA8626N)

Unit: V

| IC PIN NO.<br>INPUT SELECTOR MODES | PIN ② | PIN ⑩ | PIN ⑪    |
|------------------------------------|-------|-------|----------|
| TV                                 | 0.5   | 2.3   | 0.0[4.0] |
| SIMUL                              | 2.3   | 2.3   | 0.0[4.0] |
| LINE                               | 5.1   | 2.3   | 0.0[4.0] |

[ ]: MIC MODE

### 6) AUDIO SELECT SW AND IC902 OUTPUT L/R SELECTOR VOLTAGE

Unit: V

| AUDIO SELECT SW |       | STEREO | L   | R   | NORMAL |
|-----------------|-------|--------|-----|-----|--------|
| OUTPUT          | L     | ○      | ○   | ×   | ×      |
| DISPLAY*        | R     | ○      | ×   | ○   | ×      |
| IC902           |       |        |     |     |        |
| CONTROL         | PIN ② | 0.0    | 5.0 | 0.0 | 5.0    |
| VOLTAGE         | PIN ⑪ | 0.0    | 0.0 | 5.0 | 5.0    |

\*: L/R DISPLAY OF LEVEL METER LEFT SIDE

(○: ON, ×: OFF)

### 2) AUTO/MANUAL SELECTOR TRANSISTOR VOLTAGE

Unit: V

| SW POSITION | AUTO |     |     | MANUAL |     |     |
|-------------|------|-----|-----|--------|-----|-----|
| TERMINAL    | E    | C   | B   | E      | C   | B   |
| SYMBOL NO.  |      |     |     |        |     |     |
| QF14        | 0.0  | 8.9 | 0.0 | 0.0    | 0.0 | 2.9 |
| QF23        | 0.0  | 1.5 | 0.0 | 0.0    | 0.0 | 2.9 |

### 7) TRANSISTOR VOLTAGE OF FORCED NORMAL OUTPUT SELECTOR

Unit: V

| MODE       | REC, EE |     |     | PLAY           |     |     |                 |     |     |
|------------|---------|-----|-----|----------------|-----|-----|-----------------|-----|-----|
| USED TAPE  |         |     |     | Hi-Fi REC TAPE |     |     | NORMAL REC TAPE |     |     |
| TERMINAL   | E       | C   | B   | E              | C   | B   | E               | C   | B   |
| SYMBOL NO. |         |     |     |                |     |     |                 |     |     |
| Q937       | 0.0     | 5.0 | 0.0 | 0.0            | 5.0 | 0.0 | 0               | 0   | 3.8 |
| QK09       | 5.0     | *   | 5.0 | 5.0            | *   | 5.0 | 5.0             | 5.0 | 0   |
| QK09       | 5.0     | *   | 5.0 | 5.0            | *   | 5.0 | 5.0             | 5.0 | 0   |

\*: Voltage changes depending on L/R selector voltage (P901③, ④).

### 3) CONTROL TERMINAL VOLTAGE OF L/R SELECTOR IC, IC902 (TA8627N)

Unit: V

| IC PIN NO.<br>SW POSITION | PIN ② | PIN ⑪ |
|---------------------------|-------|-------|
| STEREO                    | 0.2   | 0.0   |
| L                         | 0.2   | 5.0   |
| R                         | 5.0   | 0.0   |
| NORMAL                    | 5.0   | 5.0   |

### 8) Hi-Fi DISPLAY TRANSISTOR VOLTAGE

Unit: V

| MODE            | REC, EE                                                |     |     | Hi-Fi TAPE PLAY |     |     |        |     |     | NORMAL TAPE PLAY |     |     |
|-----------------|--------------------------------------------------------|-----|-----|-----------------|-----|-----|--------|-----|-----|------------------|-----|-----|
| AUDIO SELECT SW | Don't care.                                            |     |     | STEREO, L, R    |     |     | NORMAL |     |     | <FORCED> NORMAL  |     |     |
| TERMINAL        | E                                                      | C   | B   | E               | C   | B   | E      | C   | B   | E                | C   | B   |
| SYMBOL NO.      |                                                        |     |     |                 |     |     |        |     |     |                  |     |     |
| Q935            | *                                                      | 4.8 | 0.0 | 4.7             | 4.8 | 4.9 | 0.1    | 0.1 | 4.9 | 0.1              | 0.1 | 4.9 |
| Q929            | 4.1                                                    | 5.0 | 4.8 | 4.1             | 5.0 | 4.8 | 0.0    | 5.0 | 0.1 | 0.0              | 5.0 | 0.1 |
| Q933, Q934      | ON/OFF depending on L/R selector voltage (P901, ③, ④). |     |     |                 |     |     |        |     |     |                  |     |     |

\*: Voltage changes depending on ON/OFF of Q933 and Q934.

### 4) CONTROL TRANSISTOR VOLTAGE OF INPUT SELECTOR IC, IC901

Unit: V

| INPUT SELECTOR SW | TV, S.C |     |     | LINE |     |     |
|-------------------|---------|-----|-----|------|-----|-----|
| TERMINAL          | E       | C   | B   | E    | C   | B   |
| SYMBOL NO.        |         |     |     |      |     |     |
| Q908              | 0.0     | 2.4 | 0.0 | 0.0  | 2.4 | 0.0 |

### 9) CONTROL TERMINAL VOLTAGE OF MIX SELECTOR IC, IC902 (TA8672N)

Unit: V

| IC PIN NO.<br>MIX SELECTOR SW | PIN ② |
|-------------------------------|-------|
| Hi-Fi                         | 4.9   |
| MIX                           | 0.6   |

### 5) TRANSISTOR VOLTAGE OF MPX FILTER SELECTOR

Unit: V

| MODE          | REC, EE |     |     | PLAY |     |     |             |     |     |
|---------------|---------|-----|-----|------|-----|-----|-------------|-----|-----|
| MPX FILTER SW | ON      |     |     | OFF  |     |     | Don't care. |     |     |
| TERMINAL      | E       | C   | B   | E    | C   | B   | E           | C   | B   |
| SYMBOL NO.    |         |     |     |      |     |     |             |     |     |
| QK01, QK01    | 0.0     | 0.0 | 2.7 | 0.0  | 0.0 | 0.0 | 0.0         | 0.0 | 0.0 |
| QK02, QK02    |         |     |     |      |     |     |             |     |     |

### 10) CONTROL TERMINAL VOLTAGE OF MIC SELECTOR IC, IC901 (TA8626N)

Unit: V

| IC PIN NO.<br>MIC MODE | PIN ② |
|------------------------|-------|
| OFF                    | 0.0   |
| ON                     | 4.1   |

## 11) MIC SELECTOR TRANSISTOR VOLTAGE

Unit: V

| MIC MODE<br>TERMINAL<br>SYMBOL NO. | OFF |     |     | ON  |     |     |
|------------------------------------|-----|-----|-----|-----|-----|-----|
|                                    | B   | C   | E   | B   | C   | E   |
| QF11                               | 0.0 | 0.0 | 0.0 | 4.1 | 0.0 | 0.0 |
| QF22                               | 0.0 | 0.0 | 0.0 | 4.1 | 0.0 | 0.0 |

## 12) CONTROL VOLTAGE OF HI-FI MODE SELECTOR IC, ICF03 (TC4053BP)

Unit: V

| IC PIN NO.<br>DIGITAL GRAPHIC<br>TIMER MODE | PIN ⑩ |
|---------------------------------------------|-------|
| OFF                                         | 8.9   |
| ON                                          | 0.0   |

Unit: V

| IC PIN NO.<br>PCM SELECTOR<br>SW | PIN ⑨     |     |
|----------------------------------|-----------|-----|
| AUTO/MANUAL<br>SELECTOR SW       | VCR       | PCM |
|                                  | AUTOMATIC | 8.9 |
| MANUAL                           | 0.0       | 8.9 |

## 13) CONTROL TERMINAL VOLTAGE OF INPUT SELECTOR IC, ICF01, ICF02

Unit: V

| PCM SW                   | VCR |     | PCM |     |
|--------------------------|-----|-----|-----|-----|
| MIC MODE                 | OFF | ON  | OFF | ON  |
| PIN ①<br>CONTROL VOLTAGE | 8.9 | 8.9 | 6.1 | 8.9 |

## 14) PCM SELECTOR TRANSISTOR VOLTAGE

Unit: V

| PCM SW                 | VCR |     |     | PCM |     |     |
|------------------------|-----|-----|-----|-----|-----|-----|
| TERMINAL<br>SYMBOL NO. | E   | C   | B   | E   | C   | B   |
| QF12                   | 0.0 | 8.9 | 0.0 | 0.0 | 0.0 | 2.8 |
| QF13                   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 |
| QF17                   | 0.0 | 8.9 | 0.0 | 0.0 | 0.0 | 2.4 |

## 15) CONTROL TERMINAL VOLTAGE OF OUTPUT SELECTOR IC, ICF05, ICF06

Unit: V

| PCM SELECTOR SW               | VCR |     | PCM |     |
|-------------------------------|-----|-----|-----|-----|
| DIGITAL GRAPHIC<br>TIMER MODE | OFF | ON  | OFF | ON  |
| PIN ①<br>CONTROL VOLTAGE      | 8.9 | 8.9 | 6.1 | 8.9 |

## 16) DIGITAL GRAPHIC TIMER SELECTOR TRANSISTOR VOLTAGE

Unit: V

| DIGITAL GRAPHIC<br>TIMER MODE | OFF |     |     | ON  |     |     |
|-------------------------------|-----|-----|-----|-----|-----|-----|
| TERMINAL<br>SYMBOL NO.        | E   | C   | B   | E   | C   | B   |
| QF15                          | 0.0 | 8.9 | 0.0 | 0.0 | 0.0 | 4.2 |
| QF16                          | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.2 |

## 17) Voltage values in the circuit diagrams are measured under the conditions as follows.

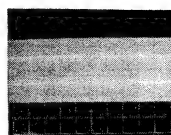
- Input selector SW : TV  
Rec level/HPX SW : AUTO/ON  
Audio select SW : STEREO  
Level meter select SW: LEVEL  
PCM selector SW : VCR
- Hi-Fi recorded tape is used for playback.

## Record Mode

## Playback Mode

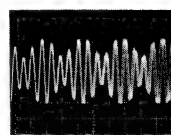
① TP901

F-6


V: 0.1V/div.  
H: 5ms/div.

① TP901

F-6


V: 0.1V/div.  
H: 1μs/div.

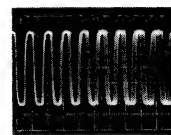
② TPK01

F-9


V: 0.5V/div.  
H: 0.5ms/div.

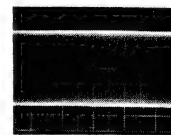
② TPK01

F-9


V: 0.5V/div.  
H: 0.5μs/div.

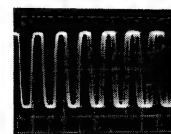
③ TPM01

F-7

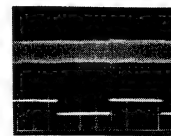

V: 0.5V/div.  
H: 0.5ms/div.

③ TPM01

F-7

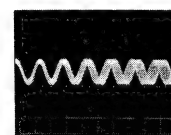

V: 0.5V/div.  
H: 0.5μs/div.

④a IC905, Pin ⑩  
④b TP902

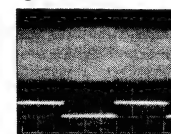
G-7  
E-7

a V: 50mV/div.  
H: 5ms/div.  
b V: 5V/div.  
H: 5ms/div.

④a IC905, Pin ⑩

G-7

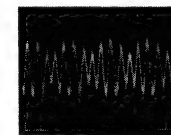

V: 50mV/div.  
H: 0.5μs/div.

⑤a TP903  
⑤b TP902

E-6  
E-7

a V: 0.1V/div.  
H: 5ms/div.  
b V: 5V/div.  
H: 5ms/div.

⑤a TP903

E-6


V: 0.1V/div.  
H: 1μs/div.

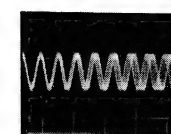
⑥a IC905, Pin ⑩  
⑥b TP902

G-9  
E-7

a V: 50mV/div.  
H: 5ms/div.  
b V: 5V/div.  
H: 5ms/div.

⑥a IC905, Pin ⑩

G-9


V: 50mV/div.  
H: 0.5μs/div.



# 15-4. Hi-Fi Audio Circuit

A

B

C

D

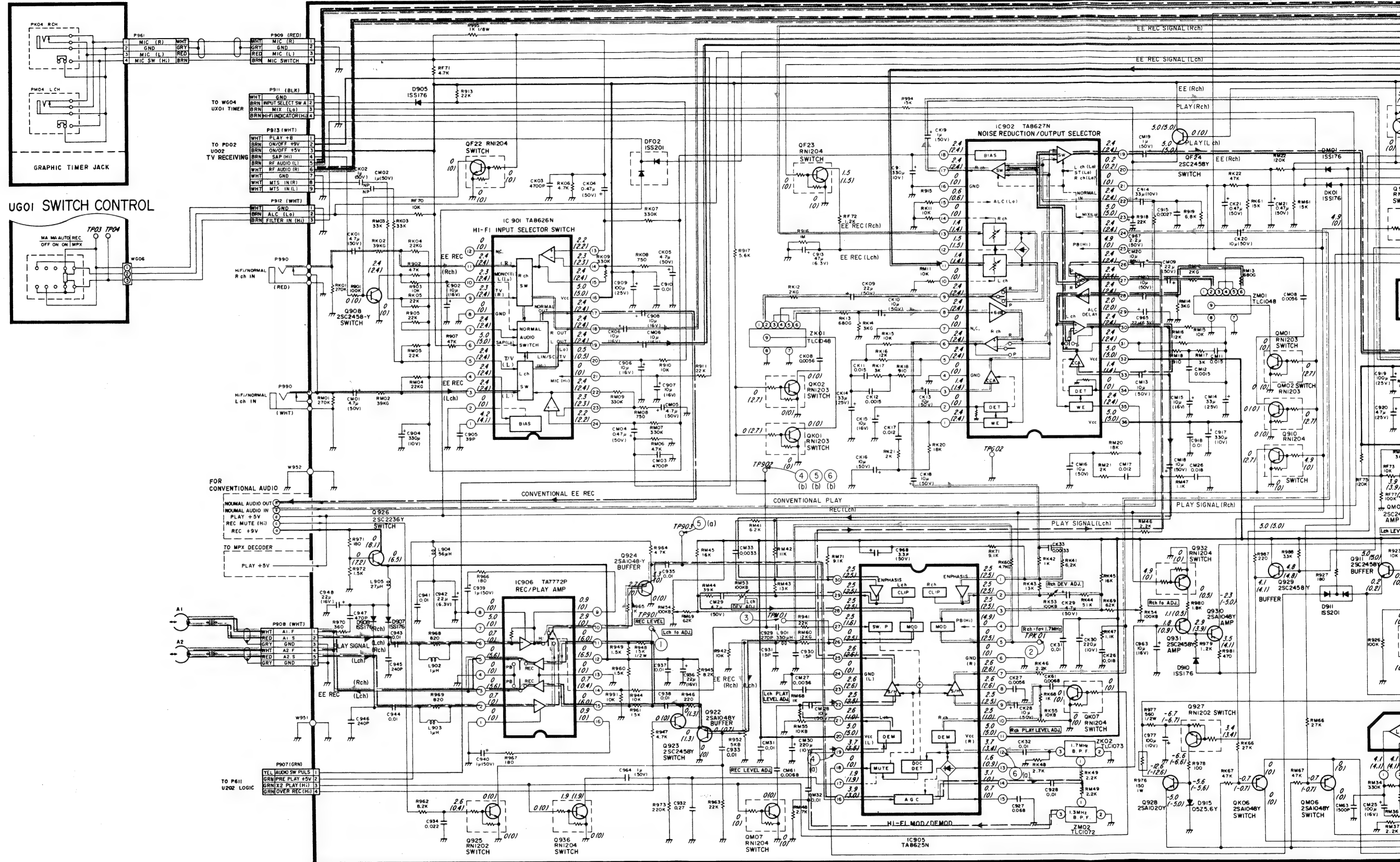
E

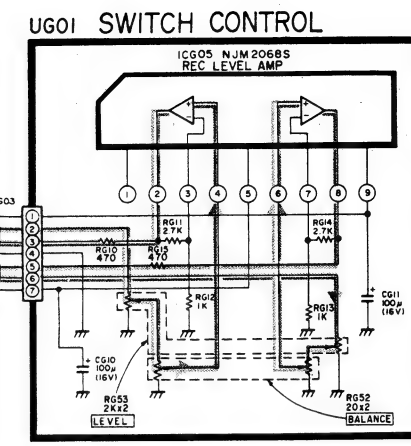
F

G

U602 MIC JACK

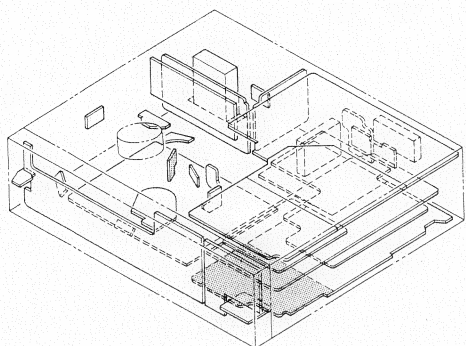
U902 Hi-Fi AUDIO







15-5. Conventional Audio PC Board



V : PLAY  
(V): REC

| Symbol No. | Voltage(Unit:V) |           |           | Location |
|------------|-----------------|-----------|-----------|----------|
|            | E               | C         | B         |          |
| Q704       | 0.0 (0.0)       | 0.0 (6.2) | 0.7 (0.0) | E-7      |
| Q705       | 0.0 (0.2)       | 0.0 (9.9) | 0.0 (0.5) | D-5      |
| Q706       | 0.0 (0.7)       | 0.0 (0.1) | 0.0 (0.7) | D-6      |
| Q707       | 0.0 (0.0)       | 8.9 (0.0) | 0.0 (0.6) | E-7      |
| Q708       | 0.0 (0.0)       | 0.0 (0.0) | 0.0 (0.7) | C-5      |
| Q709       | 0.0 (0.0)       | 0.7 (0.0) | 0.0 (0.0) | E-8      |
| Q710       | 4.5 (4.5)       | 4.3 (4.5) | 0.0 (5.2) | D-6      |
| Q711       | 0.0 (0.0)       | 3.9 (3.9) | 0.6 (0.6) | D-7      |
| Q712       | 0.0 (0.0)       | 6.5 (0.0) | 0.0 (4.2) | D-6      |
| Q713       | 0.0 (0.0)       | 0.0 (4.7) | 4.5 (0.0) | C-6      |

Location of Diodes

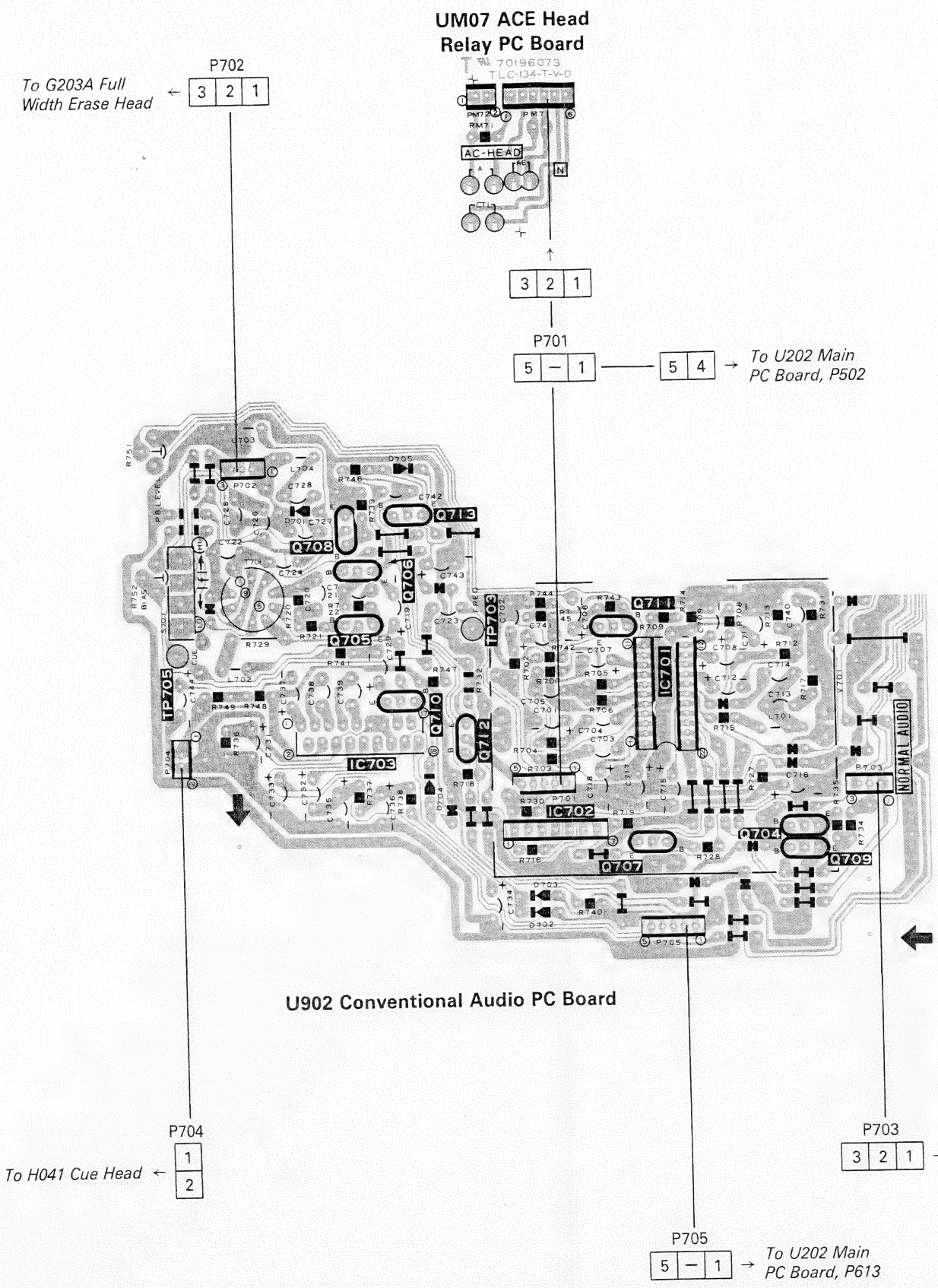
| Symbol No. | Location |
|------------|----------|
| D701       | C-5      |
| D702       | E-6      |
| D703       | E-6      |
| D704       | E-6      |
| D705       | C-6      |

Location of IC's

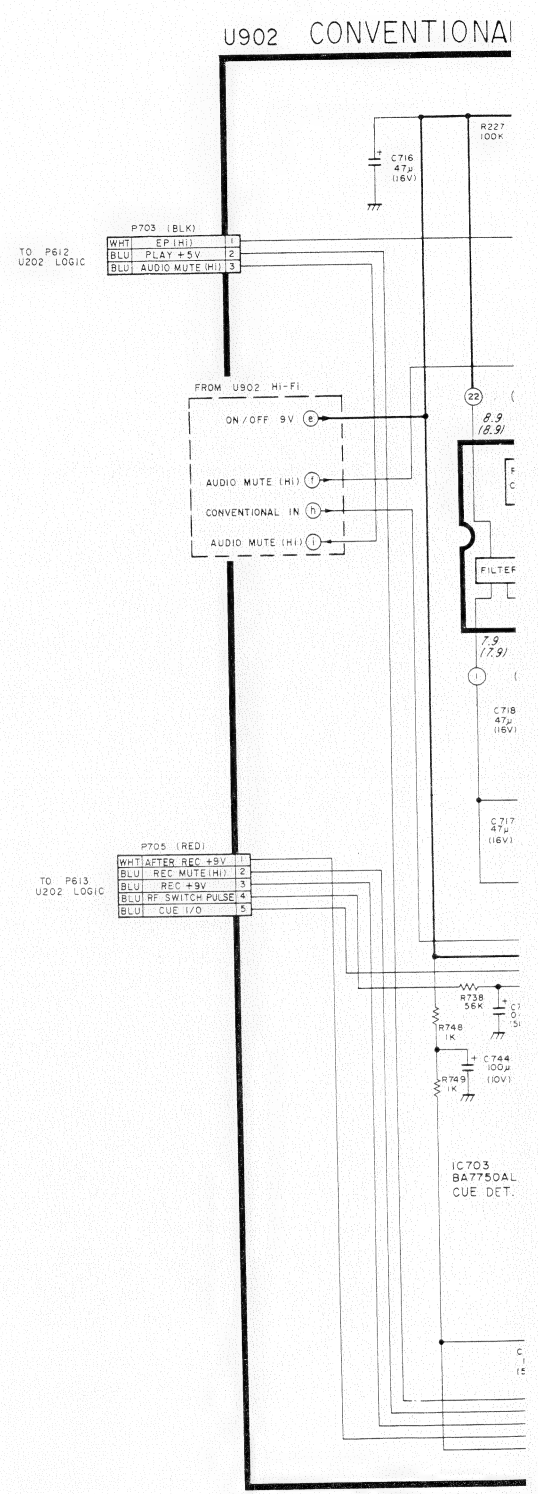
| Symbol No. | Location |
|------------|----------|
| IC701      | D-7      |
| IC702      | E-6      |
| IC703      | E-5      |

Location of adjusting VR's

| Symbol No. | Location |
|------------|----------|
| R751       | C-4      |
| R752       | D-4      |



15-6. Conventional Audio Circuit







A

B

C

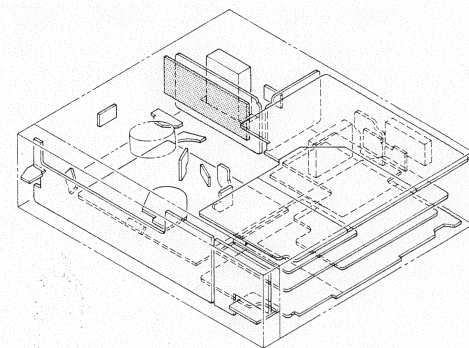
D

E

F

G

## 16-1. Pre Amp PC Board



Voltage and Location of Transistors

| Voltage and Location of Transistors |                 |     |      |     |           |     | Location |
|-------------------------------------|-----------------|-----|------|-----|-----------|-----|----------|
| Symbol No.                          | Voltage(Unit:V) |     |      |     |           |     |          |
|                                     | E               |     | C    |     | B         |     |          |
|                                     | PLAY            | REC | PLAY | REC | PLAY      | REC |          |
| QV03                                | 3.6 (4.9)       | 1.0 | 0    | 0   | 2.9 (4.2) | 0.3 | E-3      |
| QV04                                | 4.9 (3.6)       | 1.0 | 0    | 0   | 4.2 (2.9) | 0.3 | E-4      |
| QV05                                | 0               | 0   | —    | —   | —         | —   | D-4      |

Location of Diodes

| Symbol No. | Location |
|------------|----------|
| DV01       | E-4      |
| DV02       | E-4      |
| DV03       | E-5      |
| DV04       | E-5      |
| DV05       | E-3      |

Location of IC's

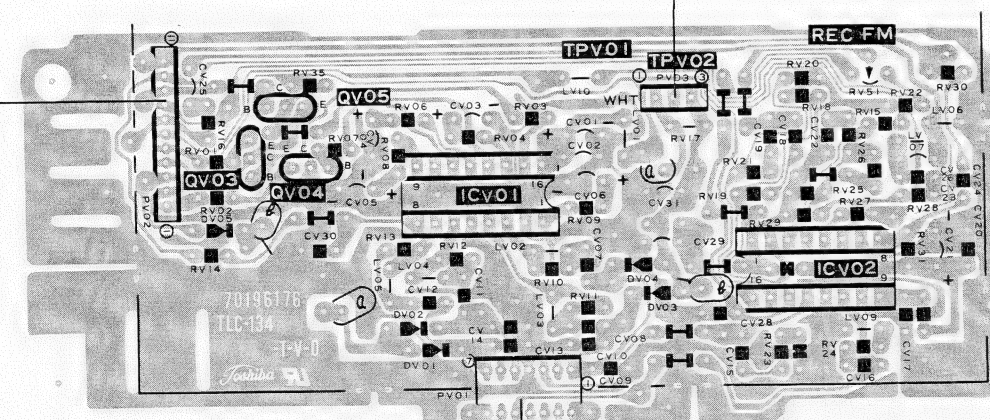
| Symbol No. | Location |
|------------|----------|
| ICV01      | E-4      |
| ICV02      | E-6      |

Location of adjusting VR

| Symbol No. | Location |
|------------|----------|
| RV51       | D-6      |

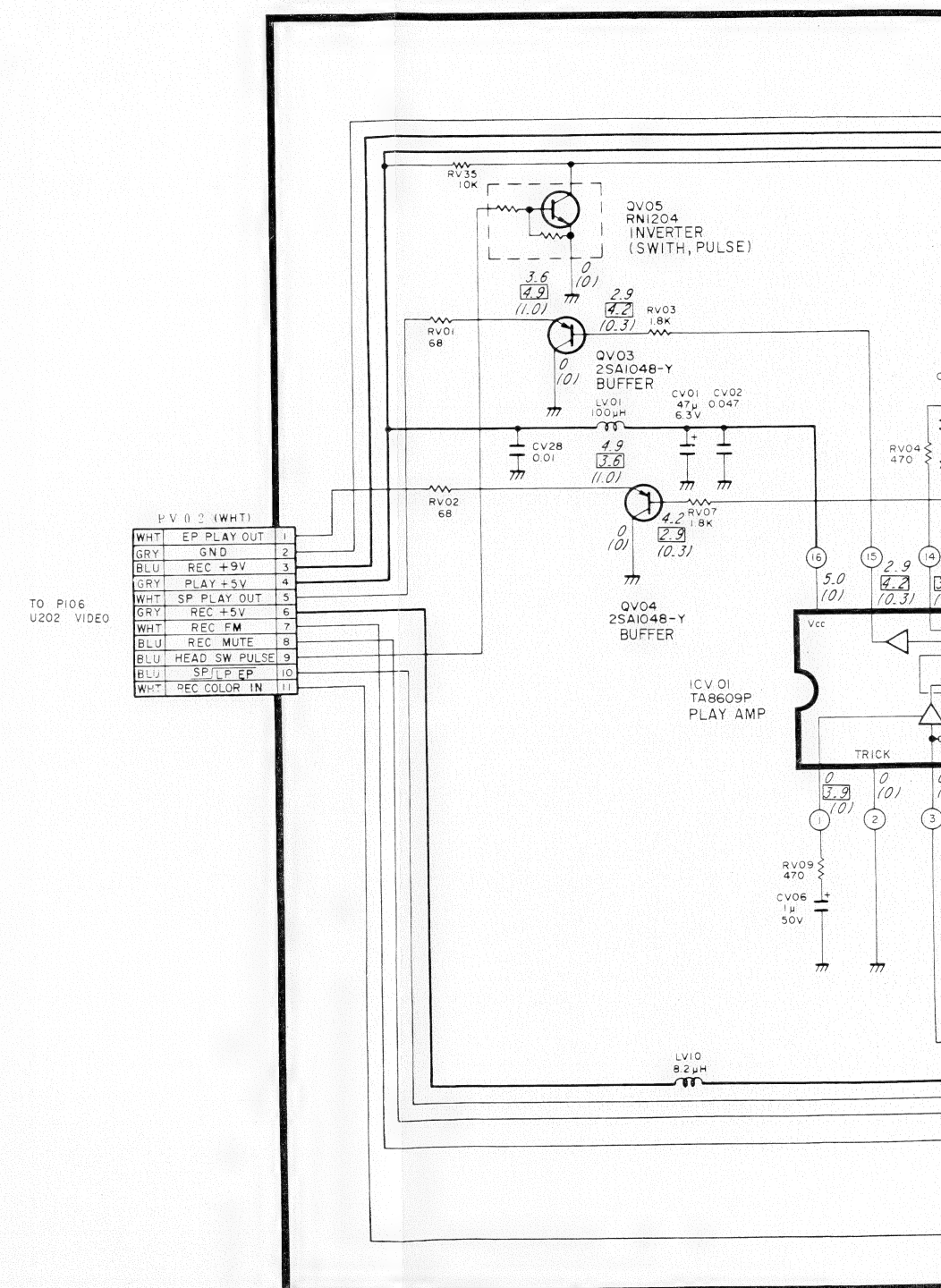
V : SP  
(V): EP

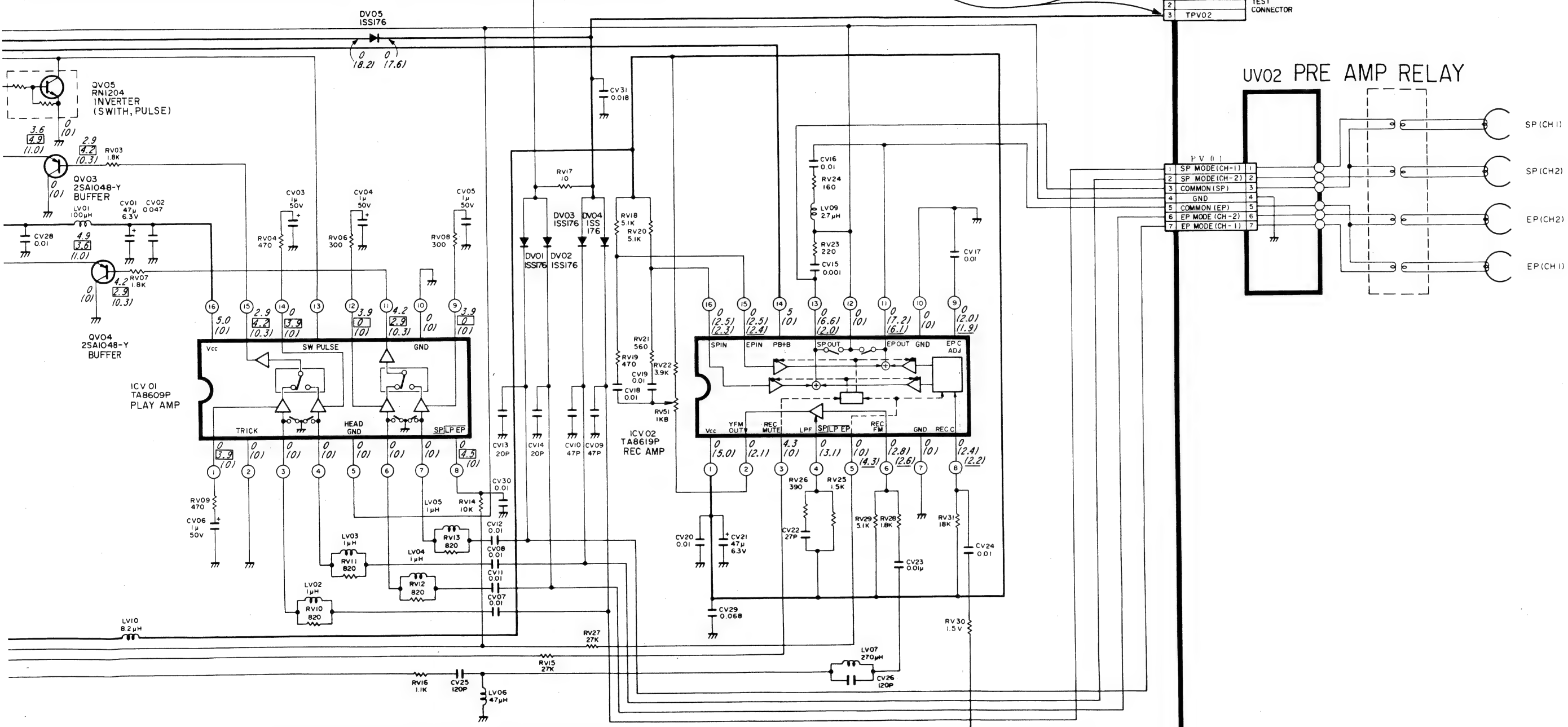
UV01 Pre Amp PC Board

PV02  
To U202 Main  
PC Board, P106PV01  
7 - 1 → To Head Relay PC Board

## 16-2. Pre Amp Circuit

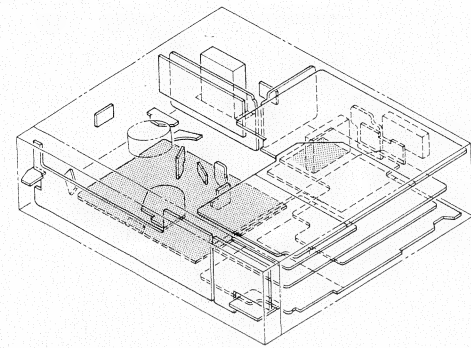
UV01 PRE AMP







## 17-3. PCM PC Board



To U202 Main  
PC Board, P311 ←

|   |
|---|
| 7 |
| 6 |

PS03

|   |
|---|
| 7 |
| 1 |

To U202 Main  
PC Board, P310 ←

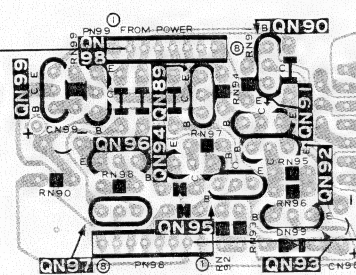
|   |
|---|
| 5 |
| 1 |

## U002 PCM Power Switch PC Board

To U803 Power 2  
PC Board, P807 ←

PN99

|   |
|---|
| 1 |
| 8 |

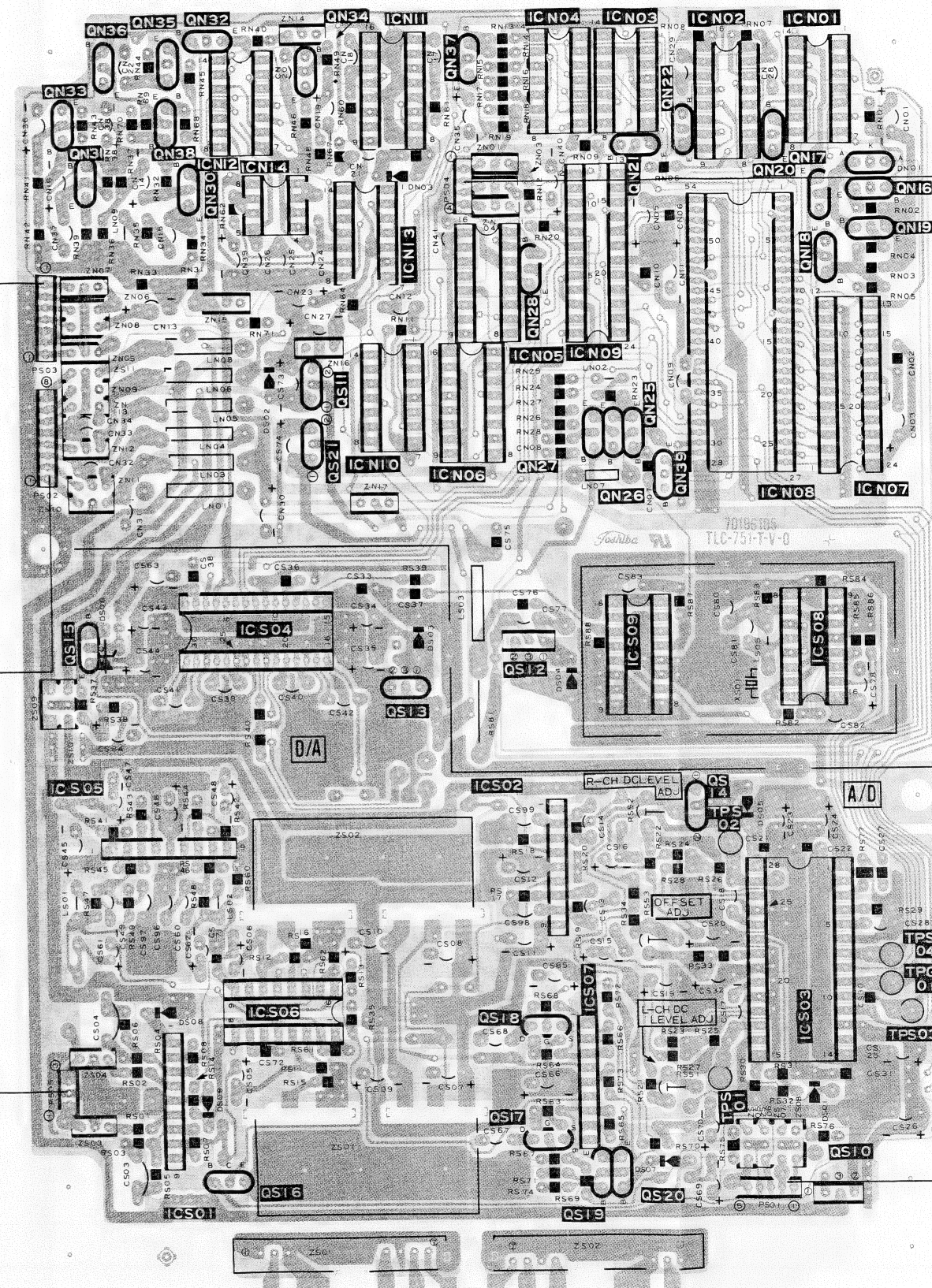


PN98 ↔ PS02

To U902 Hi-Fi  
Audio PC Board, ←  
PF02

PS05

|   |
|---|
| 3 |
| 2 |
| 1 |

US01 PCM PC Board  
(Bottom View)

PS0

|   |
|---|
| 3 |
| 2 |
| 1 |

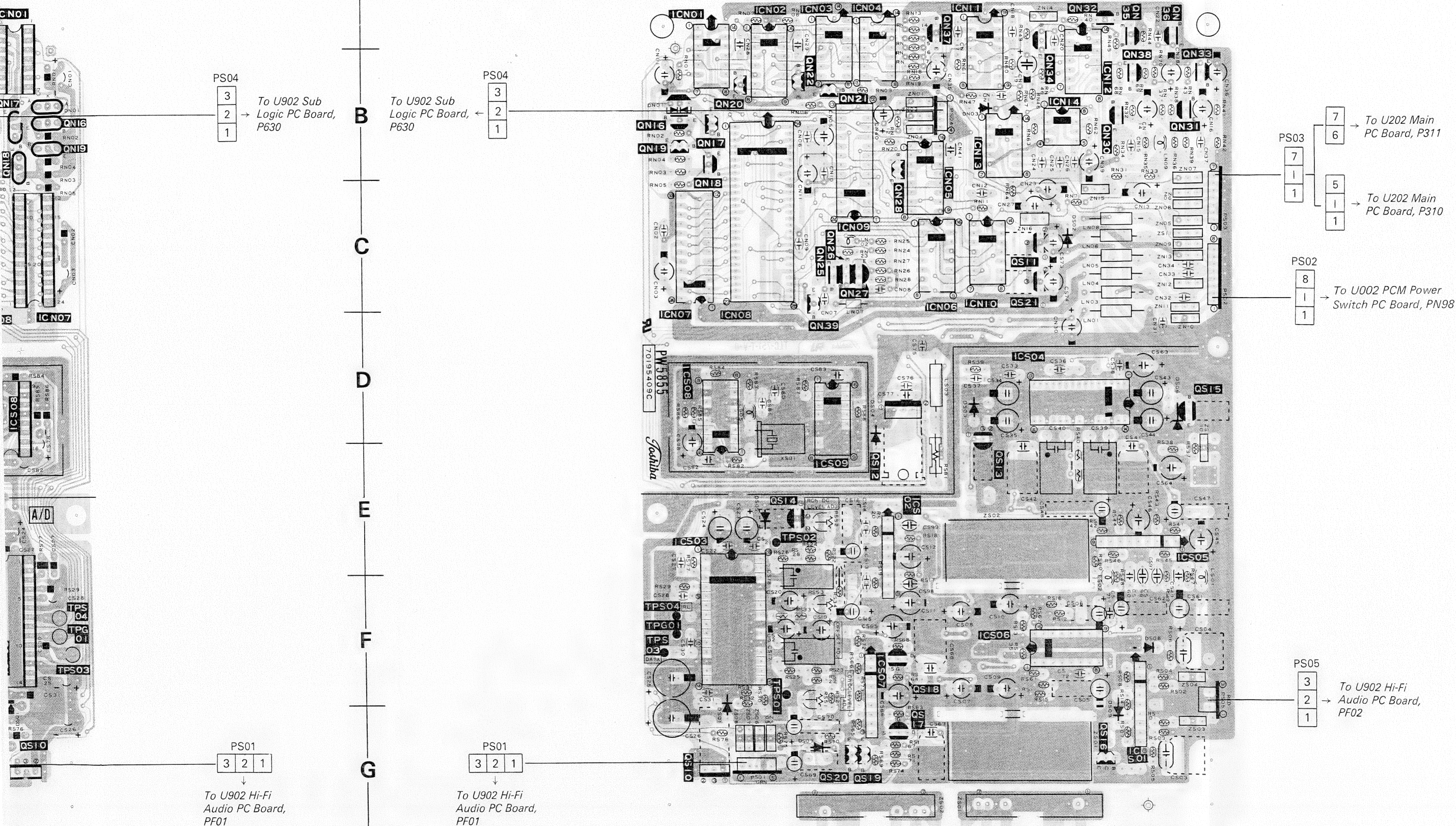
F

|   |
|---|
| 3 |
|---|

To U9  
Audio  
PF01



**US01 PCM PC Board  
(Top View)**



V : REC  
Voltage and Location of Transistors (V): PLAY

| Symbol No. | Voltage(Unit:V) |               |               | Location |
|------------|-----------------|---------------|---------------|----------|
|            | E               | C             | B             |          |
| QN16       | 1.5 (0.9)       | 4.8 (0.9)     | 0.0 (1.5)     | B-3      |
| QN17       | 4.8 (4.8)       | 0 (4.8)       | 4.8 (0.9)     | B-3      |
| QN18       | 1.5 (0.9)       | 4.8 (4.8)     | 2.1 (1.5)     | B-3      |
| QN19       | 0 (0)           | 2.1 (0.0)     | 0 (4.8)       | B-3      |
| QN20       | 0 (0)           | 0 (4.4)       | 0 (0)         | B-3      |
| QN21       | 0 (0)           | 2.3 (4.3)     | 0 (0)         | B-4      |
| QN22       | 0 (0)           | 0.0 (4.4)     | 0 (0)         | B-4      |
| QN25       | 7.2 (7.2)       | 0.0 (5.4)     | 6.6 (6.6)     | C-4      |
| QN26       | 7.2 (7.2)       | 5.4 (5.4)     | 6.6 (6.6)     | D-4      |
| QN27       | 5.4 (5.4)       | 2.0 (2.0)     | 4.8 (4.8)     | C-4      |
| QN28       | 0 (0)           | 0 (2.3)       | 3.7 (0.1)     | C-4      |
| QN30       | 1.4 (1.4)       | 7.0 (7.0)     | 2.0 (2.0)     | B-7      |
| QN31       | 2.0 (2.0)       | 4.5 (4.5)     | 2.7 (2.7)     | B-7      |
| QN32       | 1.6 (1.6)       | 0.0 (0.0)     | 1.6 (1.6)     | A-6      |
| QN33       | 1.6 (1.6)       | 8.6 (8.6)     | 2.3 (2.3)     | B-7      |
| QN34       | 1.2 (1.1)       | 4.8 (4.8)     | 1.7 (1.6)     | A-5      |
| QN35       | 2.4 (2.3)       | 0.0 (0.0)     | 1.7 (1.7)     | A-6      |
| QN36       | 1.7 (1.7)       | 8.8 (8.8)     | 1.6 (1.6)     | A-6      |
| QN37       | 2.1 (2.5)       | 4.8 (4.8)     | 2.8 (3.3)     | A-5      |
| QN38       | 2.4 (2.4)       | 8.6 (8.8)     | 2.8 (2.8)     | B-7      |
| QN39       | 0.0 (0.0)       | 4.7 (4.7)     | 0.0 (0.0)     | C-4      |
| QN89       | 0 (0)           | 0.1 (0.1)     | 2.1 (2.1)     | D-9      |
| QN90       | 6.5 (6.5)       | 6.4 (6.4)     | 5.9 (5.9)     | D-9      |
| QN91       | 4.9 (4.9)       | 2.3 (2.3)     | 4.9 (4.9)     | D-9      |
| QN92       | 4.9 (4.9)       | 4.8 (4.8)     | 2.3 (2.3)     | D-9      |
| QN93       | -13.0 (-13.0)   | -12.9 (-12.9) | -12.2 (-12.2) | D-9      |
| QN94       | 0 (0)           | 0.1 (0.1)     | 2.1 (2.1)     | D-9      |
| QN95       | 4.9 (4.9)       | 4.9 (4.9)     | 0.1 (0.1)     | D-9      |
| QN96       | 0 (0)           | 0.2 (0.2)     | 2.1 (2.1)     | D-10     |
| QN97       | 4.9 (4.9)       | 4.9 (4.9)     | 0.2 (0.2)     | D-10     |
| QN98       | 0 (0)           | 0.1 (0.1)     | 2.1 (2.1)     | D-10     |
| QN99       | 8.9 (8.9)       | 8.8 (8.8)     | 0.1 (0.1)     | D-10     |
| QS15       | 5.0 (5.0)       | 6.4 (6.4)     | 5.7 (5.7)     | D-7      |
| QS16       | 0 (0)           | 0 (8.5)       | 4.7 (0)       | G-6      |
|            | G               | S             | D             |          |
| QS17       | 0.6 (0.6)       | 0 (0)         | 0 (0)         | G-5      |
| QS18       | 0.6 (0.6)       | 0 (0)         | 0 (0)         | F-5      |
|            | E               | C             | B             |          |
| QS19       | 4.9 (4.9)       | 4.9 (4.9)     | 2.1 (4.9)     | G-4      |
| QS20       | 4.9 (4.9)       | 4.9 (4.9)     | 4.1 (0.9)     | G-4      |

V : REC  
Voltage and Location of IC's (V): PLAY

| Symbol No. | Voltage(Unit:V) |               |               | Location |
|------------|-----------------|---------------|---------------|----------|
|            | ①               | ②             | ③             |          |
| ICS10      | 0 (0)           | -10.2 (-10.2) | -12.1 (-12.1) | G-3      |
| ICS11      | -9.1 (-9.1)     | 0 (0)         | -12.0 (-12.0) | C-5      |
| ICS12      | 0 (0)           | -5.1 (-5.1)   | -7.5 (-7.5)   | D-5      |
| ICS13      | -5.0 (-5.0)     | 0 (0)         | -9.0 (-9.0)   | E-5      |
| ICS14      | 4.9 (4.9)       | 8.6 (8.6)     | 0 (0)         | E-4      |
| ICS21      | -9.0 (-9.0)     | 0 (0)         | -12.9 (-12.9) | C-5      |

Location of IC's

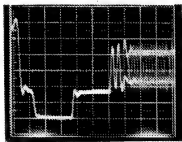
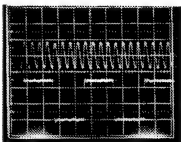
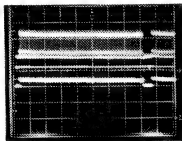
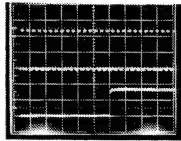
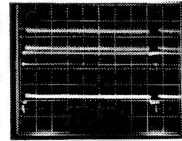
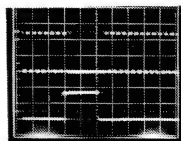
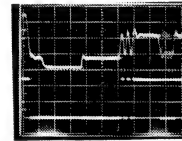
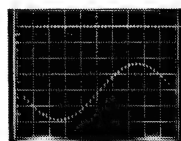
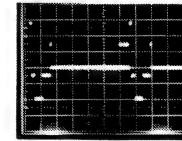
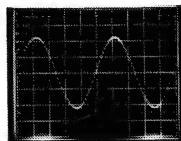
| Symbol No. | Location |
|------------|----------|
| ICN01      | A-3      |
| ICN02      | A-4      |
| ICN03      | A-4      |
| ICN04      | A-4      |
| ICN05      | C-4      |
| ICN06      | C-5      |
| ICN07      | D-3      |
| ICN08      | D-3      |
| ICN09      | C-4      |
| ICN10      | C-5      |
| ICN11      | A-5      |
| ICN12      | B-6      |
| ICN13      | B-5      |
| ICN14      | B-6      |
| ICS01      | G-6      |
| ICS02      | E-5      |
| ICS03      | F-3      |
| ICS04      | D-6      |
| ICS05      | E-7      |
| ICS06      | F-6      |
| ICS07      | F-4      |
| ICS08      | D-3      |
| ICS09      | D-4      |

Location of Diodes

| Symbol No. | Location |
|------------|----------|
| DN01       | B-3      |
| DN03       | B-5      |
| DN99       | D-9      |
| DS01       | G-3      |
| DS02       | C-6      |
| DS03       | D-5      |
| DS04       | D-4      |
| DS05       | E-3      |
| DS06       | D-7      |
| DS07       | G-4      |
| DS08       | F-6      |
| DS09       | F-6      |

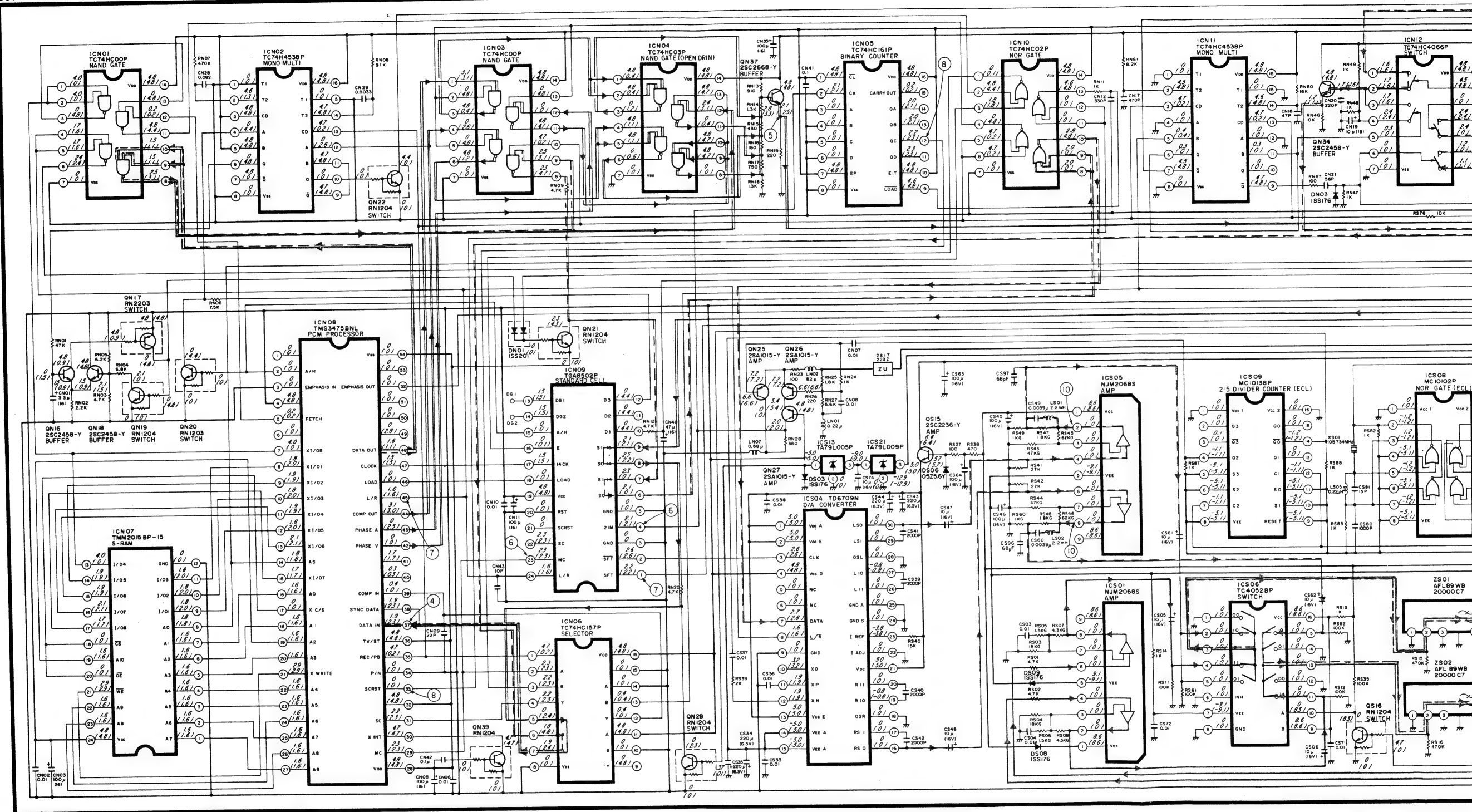
Location of adjusting VR's

| Symbol No. | Location |
|------------|----------|
| RS51       | F-4      |
| RS52       | E-4      |
| RS53       | F-4      |

|                                                                                                                                                                                                    |                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>① QN33, Emitter (Play) C-15</p>  <p>V: 0.5V/div.<br/>H: 2<math>\mu</math>s/div.</p>                            | <p>⑥a ICN09, Pin ④ E-6<br/>⑥b ICN09, Pin ②③ E-5</p>  <p>V: 2V/div.<br/>H: 0.1<math>\mu</math>s/div.</p>        |
| <p>②a QN33, Emitter C-15<br/>②b ICN14, Pin ① (Play) B-13</p>  <p>V: 1V/div.<br/>H: 2ms/div.</p>                   | <p>⑦a ICN09, Pin ① F-6<br/>⑦b ICN08, Pin ④⑤ E-4</p>  <p>V: 2V/div.<br/>H: 2<math>\mu</math>s/div.</p>          |
| <p>③a QN33, Emitter C-15<br/>③b ICN14, Pin ⑦ (Play) B-14</p>  <p>V: 1V/div.<br/>H: 2ms/div.</p>                  | <p>⑧a ICN05, Pin ⑫ B-8<br/>⑧b ICN08, Pin ③③ (Play) F-4</p>  <p>V: 2V/div.<br/>H: 10<math>\mu</math>s/div.</p> |
| <p>④a QN33, Emitter C-15<br/>④b ICN08, Pin ③⑦ (Play) F-4</p>  <p>V: 1V/div.<br/>H: 10<math>\mu</math>s/div.</p> | <p>⑨ TPS01/TPS02 E-15/G-15</p>  <p>V: 1V/div.<br/>H: 0.1ms/div.</p>                                          |
| <p>⑤ QN37, Emitter (STOP) B-7</p>  <p>V: 0.2V/div.<br/>H: 10<math>\mu</math>s/div.</p>                          | <p>⑩ ICS05, Pin ②, ⑧ D-9, E-9</p>  <p>V: 1V/div.<br/>H: 0.2ms/div.</p>                                       |



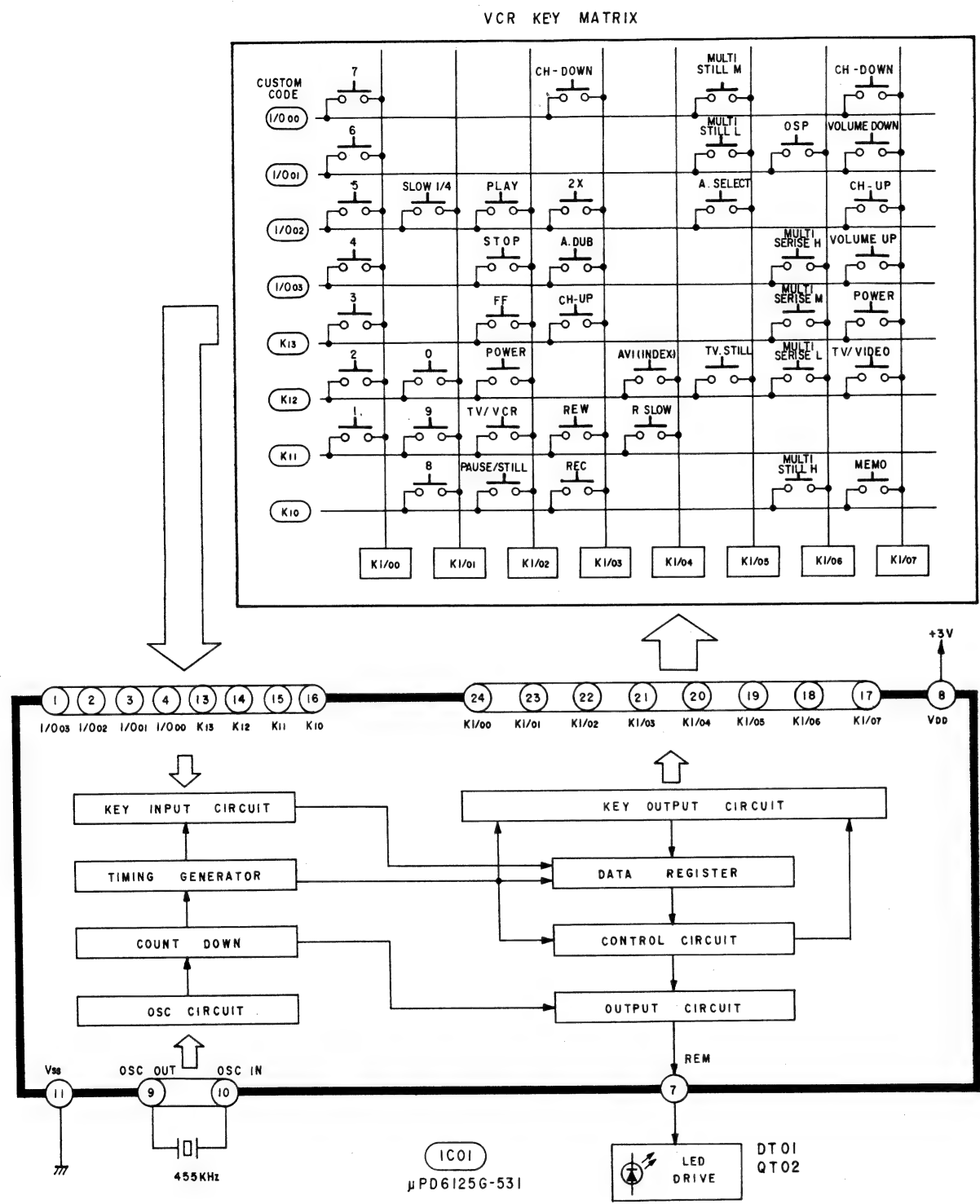
## US01 PCM



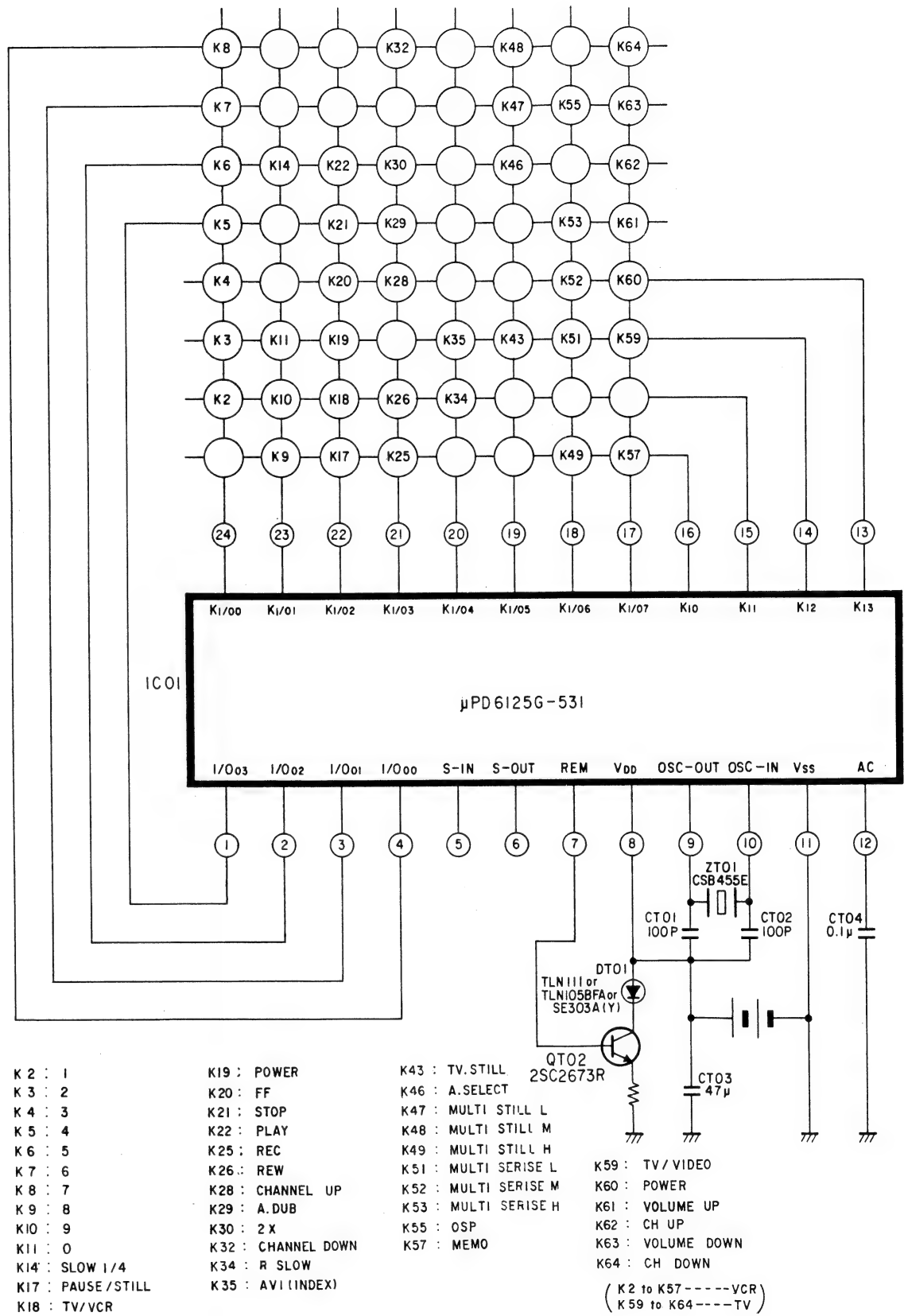




18-1. Remote Control Block Diagram



18-2. Remote Control Circuit



# SECTION 4

## PARTS LIST

### SAFETY PRECAUTION

The parts identified by  $\triangle$  mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals. The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

### NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

### ABBREVIATIONS

1. Integrated circuit (IC)

2. Capacitor (Cap)

MF . . . . . microfarad

PF . . . . . picofarad (micro-microfarad)

3. Resistor (Res)

All resistance values are in ohms.

K . . . . . Kilo (1000)

M . . . . . Mega (1000000)

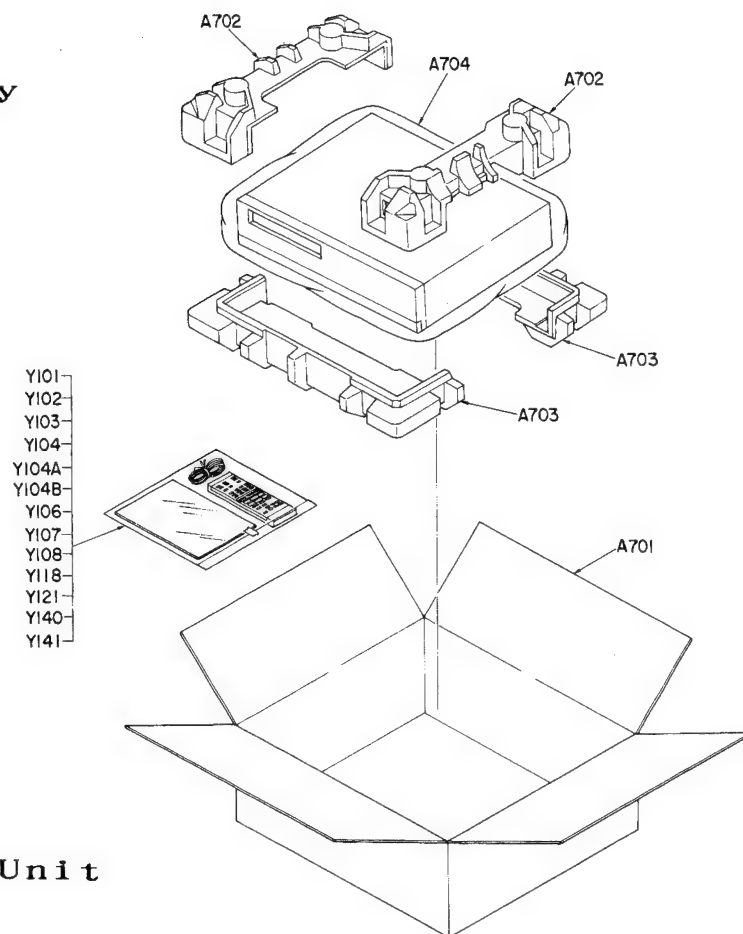
W . . . . . Watt

4. Tolerance

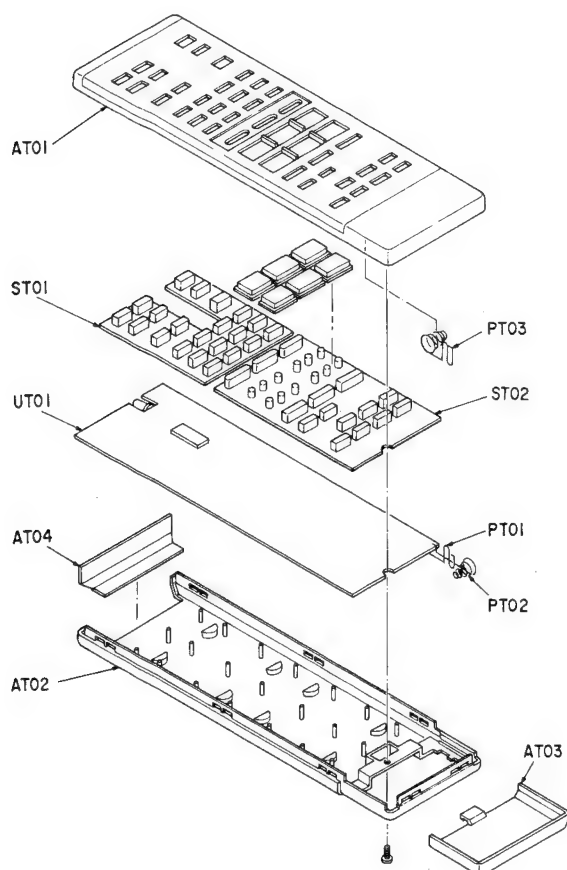
| Symbol | G       | J       | K        | M        | N        | Z          | P          | A           |
|--------|---------|---------|----------|----------|----------|------------|------------|-------------|
| %      | $\pm 2$ | $\pm 5$ | $\pm 10$ | $\pm 20$ | $\pm 30$ | +80<br>-20 | +100<br>-0 | +100<br>-10 |

# 1.Exploded Views

## (1) Packing Assembly

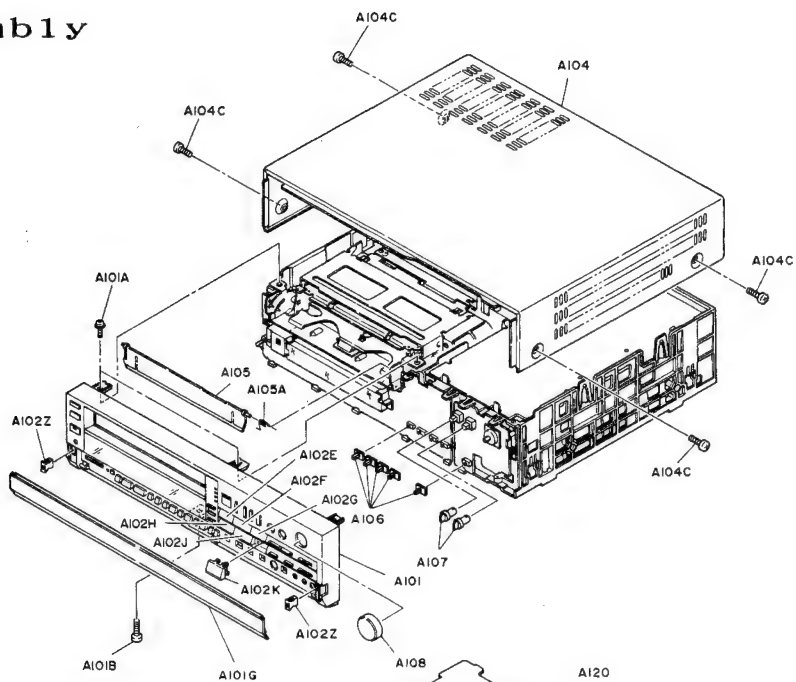


## (2) Remote Control Unit

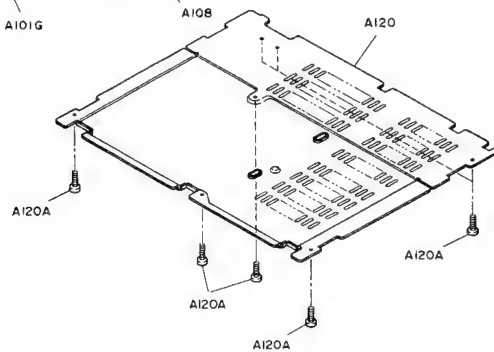
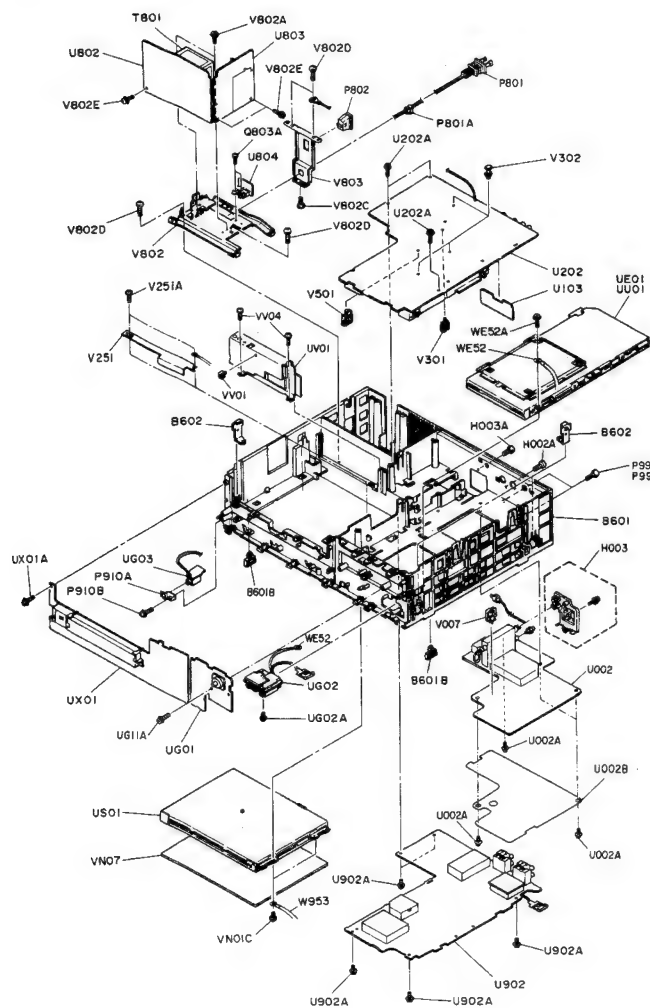




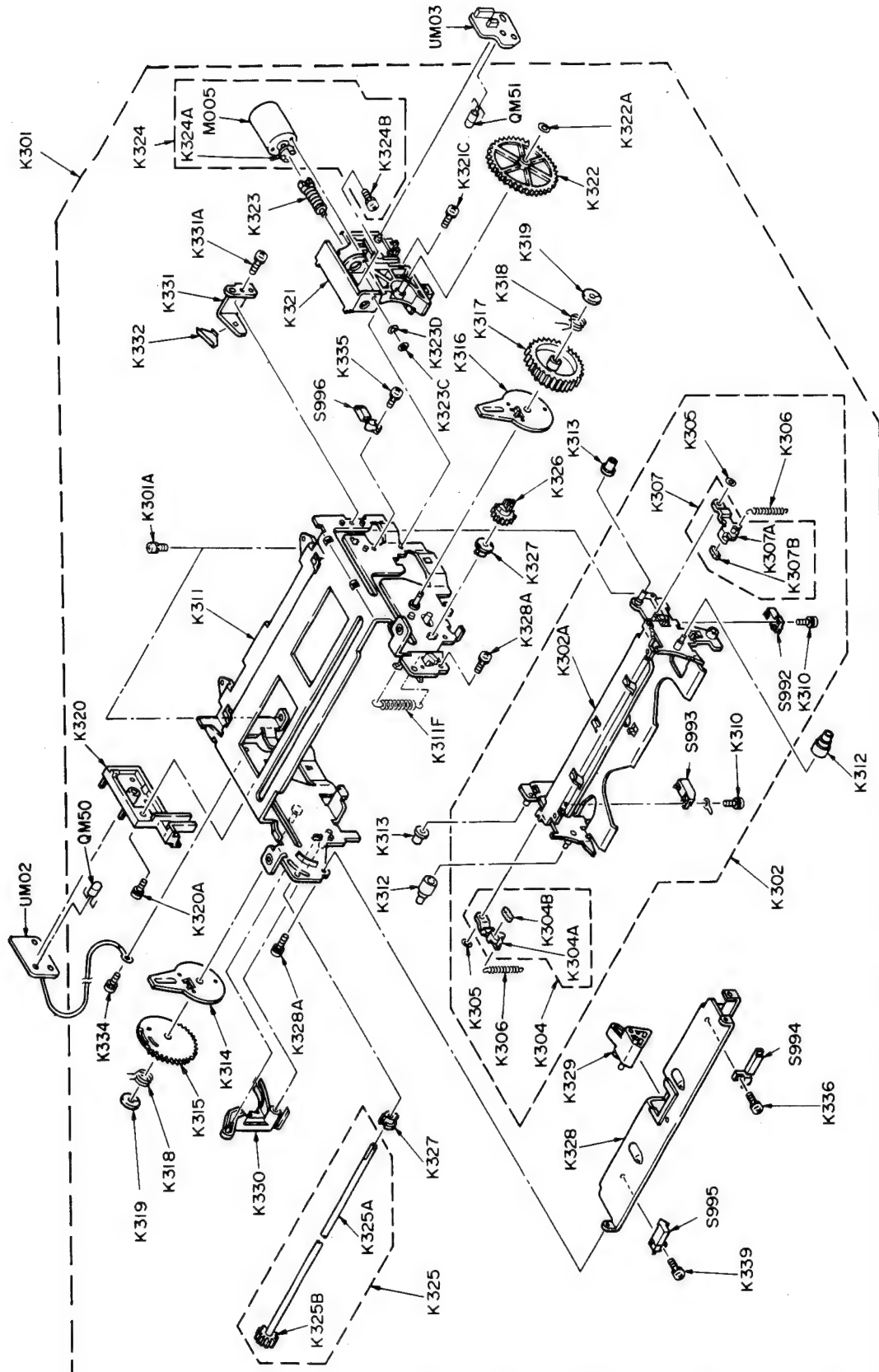
(3) Cabinet Assembly



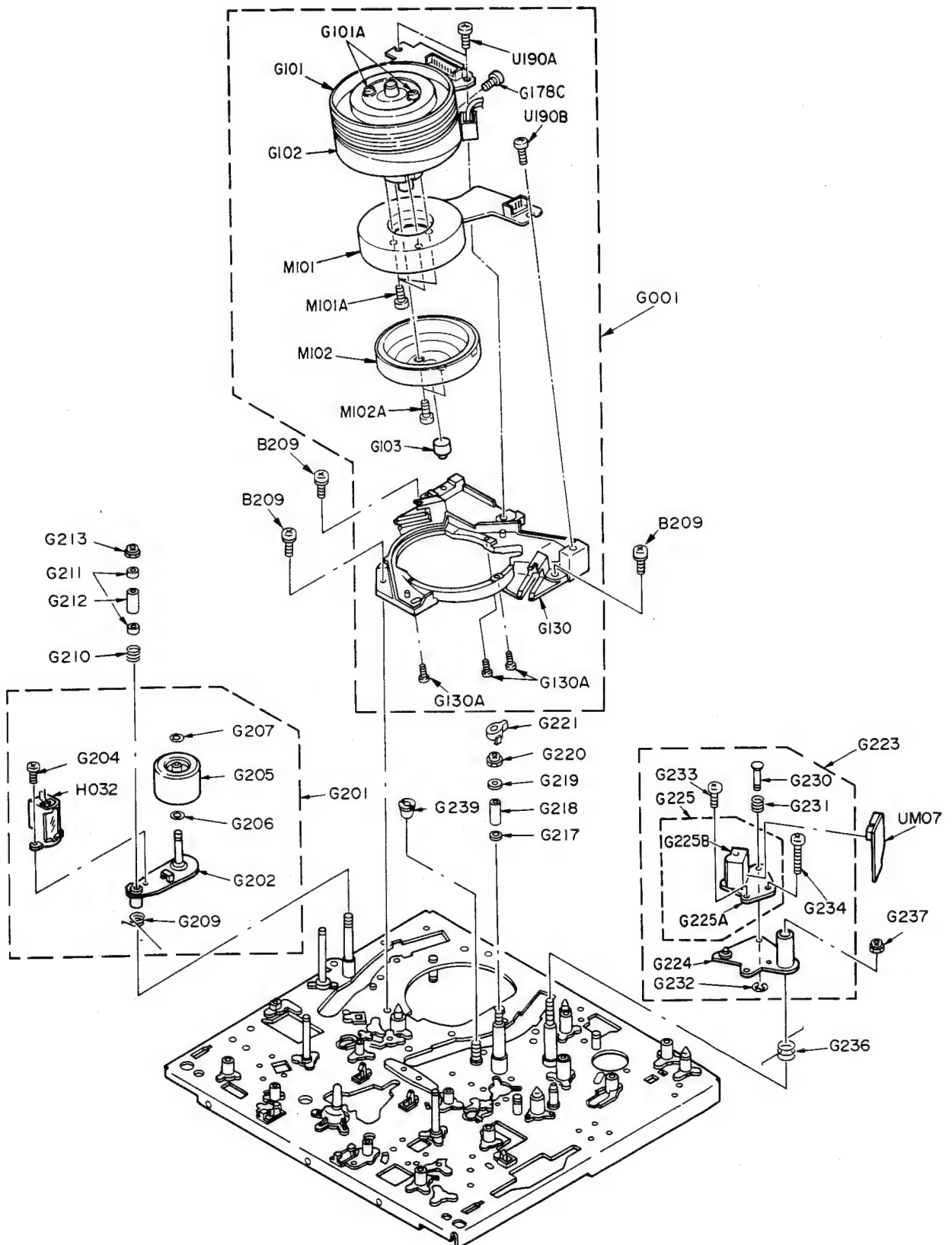
#### (4) Chassis Assembly



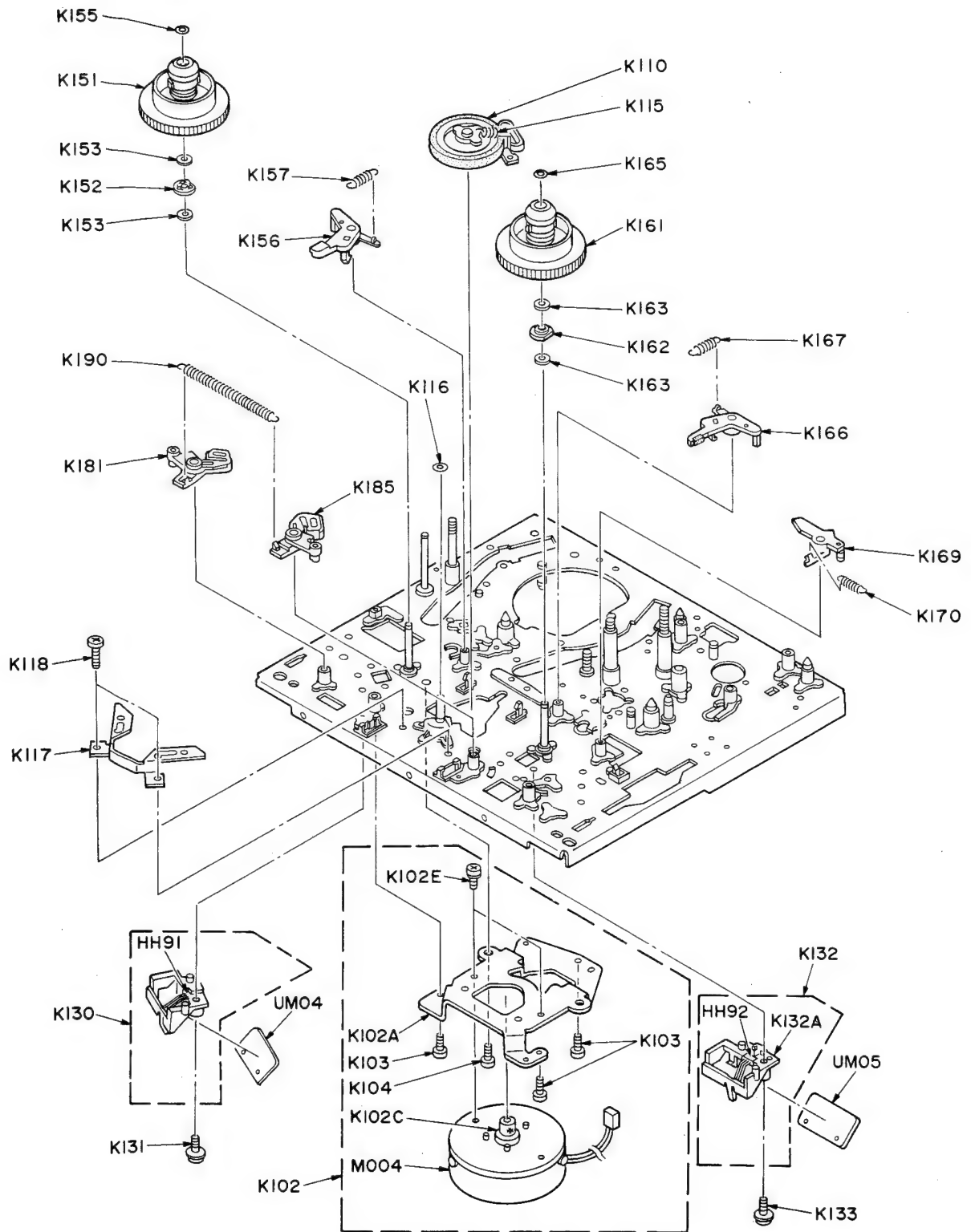
## (5) Cassette Holder Assembly



# (6) Mechanical Parts (1)

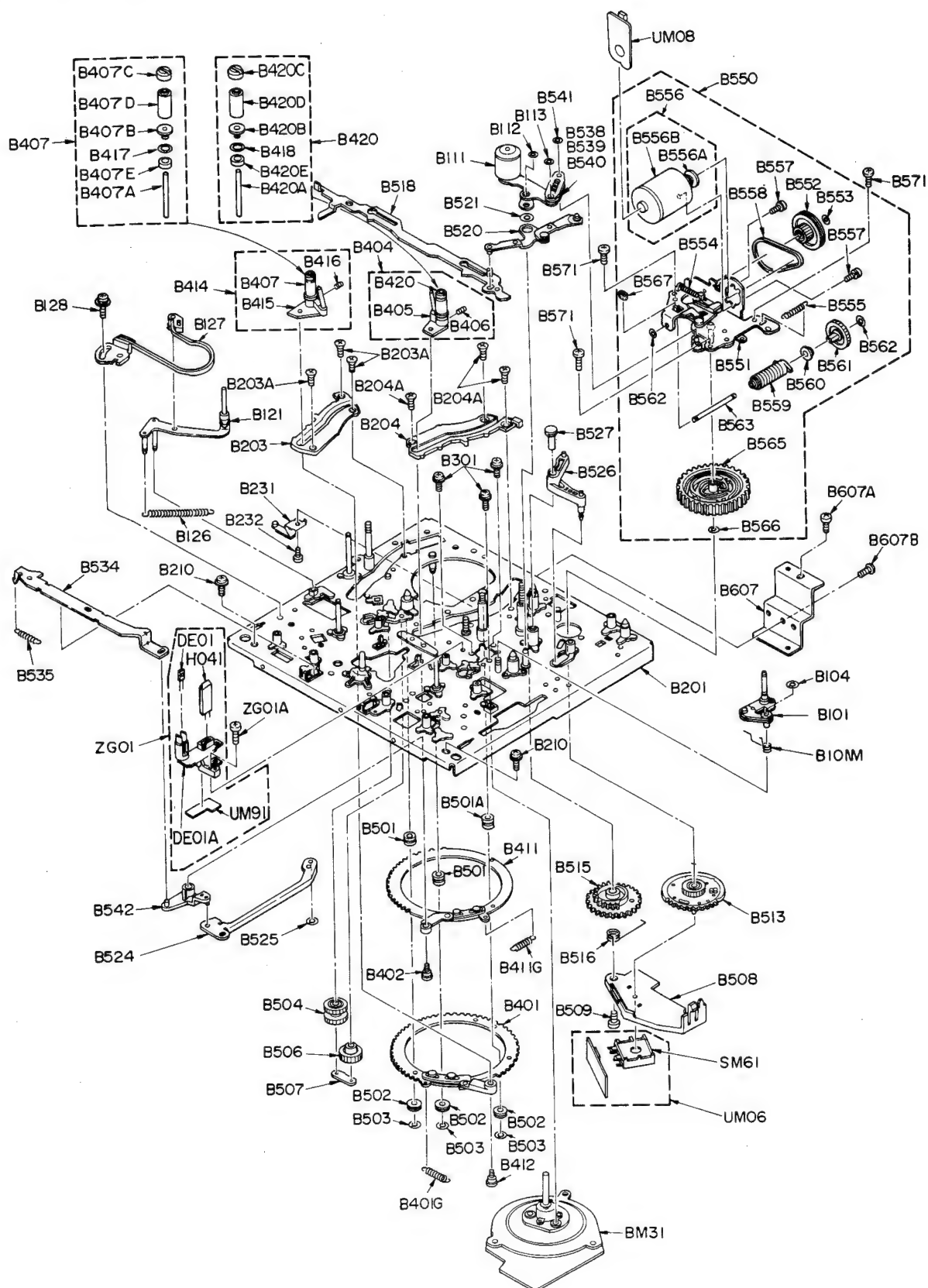


## (7) Mechanical Parts (2)





(8) Mechanical Parts (3)



## 2. Parts List

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |
|--------------------|----------------|-------------|
|--------------------|----------------|-------------|

### ELECTRICAL PARTS

|                                       |          |                    |           |
|---------------------------------------|----------|--------------------|-----------|
| U002                                  | 70197356 | P C Board Assy.PIF |           |
| I N T E G R A T E D   C I R C U I T S |          |                    |           |
| IC001                                 | 23119143 | IC                 | M51365SP  |
| ICA01                                 | B0272490 | IC                 | TD6350P   |
| T R A N S I S T O R S                 |          |                    |           |
| Q002                                  | A6319020 | Transistor         | 2SC1923-0 |
| Q003                                  | A6708871 | Transistor         | 2SC388ATM |
| Q004                                  | A6534430 | Transistor         | 2SA1048-Y |
| Q005                                  | A6332430 | Transistor         | 2SC2458-Y |
| Q006                                  | A6534430 | Transistor         | 2SA1048-Y |
| Q007                                  | A6012040 | Transistor         | RN2204    |
| Q008                                  | A6012040 | Transistor         | RN2204    |
| Q009                                  | A6534430 | Transistor         | 2SA1048-Y |
| Q010                                  | A6332430 | Transistor         | 2SC2458-Y |
| Q011                                  | A6509140 | Transistor         | 2SA562TMY |
| Q012                                  | A6002010 | Transistor         | RN1201    |
| Q013                                  | A6002020 | Transistor         | RN1202    |
| Q014                                  | A6319020 | Transistor         | 2SC1923-0 |
| Q015                                  | A6332430 | Transistor         | 2SC2458-Y |
| Q017                                  | A6332430 | Transistor         | 2SC2458-Y |
| Q018                                  | A6509140 | Transistor         | 2SA562TMY |
| QA02                                  | A6317420 | Transistor         | 2SC1815-0 |
| QA03                                  | A6317420 | Transistor         | 2SC1815-0 |
| QA04                                  | A6332430 | Transistor         | 2SC2458-Y |
| QA05                                  | A6002040 | Transistor         | RN1204    |
| QA06                                  | A6534430 | Transistor         | 2SA1048-Y |
| QA07                                  | A6534430 | Transistor         | 2SA1048-Y |
| QA08                                  | A6002010 | Transistor         | RN1201    |
| QA09                                  | A6002010 | Transistor         | RN1201    |
| QD01                                  | A6332430 | Transistor         | 2SC2458-Y |
| QD62                                  | A6012010 | Transistor         | RN2201    |
| QD64                                  | A6342200 | Transistor         | 2SC2878A  |
| QD71                                  | A6012010 | Transistor         | RN2201    |
| QD72                                  | A6002040 | Transistor         | RN1204    |
| QD73                                  | A6332430 | Transistor         | 2SC2458-Y |
| QD99                                  | A6002040 | Transistor         | RN1204    |
| QN89                                  | A6002020 | Transistor         | RN1202    |
| QN90                                  | A6533240 | Transistor         | 2SA966-Y  |
| QN91                                  | A6012020 | Transistor         | RN2202    |
| QN92                                  | A6012020 | Transistor         | RN2202    |
| QN93                                  | A6325540 | Transistor         | SC2236-Y  |
| QN94                                  | A6002020 | Transistor         | RN1202    |
| QN95                                  | A6533240 | Transistor         | 2SA966-Y  |
| QN96                                  | A6002020 | Transistor         | RN1202    |
| QN97                                  | A6533240 | Transistor         | 2SA966-Y  |
| QN98                                  | A6002020 | Transistor         | RN1202    |
| QN99                                  | A6533240 | Transistor         | 2SA966-Y  |
| D I O D E S                           |          |                    |           |
| D001                                  | A7160570 | Diode              | 1SS176    |
| D003                                  | A7160570 | Diode              | 1SS176    |
| D004                                  | A7160570 | Diode              | 1SS176    |
| D005                                  | A7160570 | Diode              | 1SS176    |
| D006                                  | A7151500 | Diode              | 1SS201    |
| D007                                  | A7160570 | Diode              | 1SS176    |
| DA01                                  | A7160570 | Diode              | 1SS176    |
| DA02                                  | A7160570 | Diode              | 1SS176    |
| DA03                                  | A7151450 | Diode              | 1SS200    |
| DA04                                  | A7151500 | Diode              | 1SS201    |
| DD61                                  | A7160570 | Diode              | 1SS176    |
| DD62                                  | A7151450 | Diode              | 1SS200    |
| DD63                                  | A7160570 | Diode              | 1SS176    |
| DD69                                  | A7160570 | Diode              | 1SS176    |
| DN99                                  | A7160570 | Diode              | 1SS176    |
| C O I L S                             |          |                    |           |
| L001                                  | 23237998 | Coil.Peaking       | TRF4129AC |
| L003                                  | 23283338 | Coil.Peaking       | TRF4R33J  |
| L004                                  | 23262828 | Coil.PIF           | TRF1065   |
| L005                                  | 23262828 | Coil.PIF           | TRF1065   |
| L006                                  | 23237976 | Coil.Peaking       | TRF4820AC |
| L007                                  | 23237977 | Coil.Peaking       | TRF4680AC |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |
|--------------------|----------------|-------------|
|--------------------|----------------|-------------|

|                     |          |                          |                |
|---------------------|----------|--------------------------|----------------|
| L008                | 23237977 | Coil.Peaking             | TRF4680AC      |
| L009                | 23237977 | Coil.Peaking             | TRF4680AC      |
| L010                | 23238739 | Coil.Peaking             | TRF4150AH      |
| L011                | 23283398 | Coil.Peaking             | TRF4R39J       |
| L012                | 23237980 | Coil.Peaking             | TRF4390AC      |
| L013                | 23237977 | Coil.Peaking             | TRF4680AC      |
| L014                | 23262795 | Coil.IF                  | TRF1095        |
| L015                | 23252918 | Coil.SIF                 | TRF6019        |
| L020                | 23283228 | Coil.Peaking             | TRF4R22J       |
| L051                | 23262743 | Coil.IF                  | TRF1130        |
| L052                | 23232897 | Coil.Variable            | TRF3104        |
| LD01                | 23107798 | Filter.TLC1066. 15. 7KHz |                |
| LD63                | 23107803 | Filter.TLC1063.13KHz     |                |
| LD64                | 23107803 | Filter.TLC1063.13KHz     |                |
| C A P A C I T O R S |          |                          |                |
| C001                | 24436150 | Cap.Ceramic              | 15PF J 50V     |
| C002                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C003                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C004                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C005                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C006                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C007                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C008                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C009                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C010                | 24436160 | Cap.Ceramic              | 16PF J 50V     |
| C012                | 24206479 | Cap.Electrolytic         | 4. 7MF M 50V   |
| C013                | 24617994 | Cap.Electrolytic         | 0. 47MF M 50V  |
| C015                | 24203470 | Cap.Electrolytic         | 47MF M 16V     |
| C016                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C017                | 24203470 | Cap.Electrolytic         | 47MF M 16V     |
| C018                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C019                | 24591104 | Cap.Plastic              | 0. 1MF J 50V   |
| C020                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C021                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C022                | 24203470 | Cap.Electrolytic         | 47MF M 16V     |
| C023                | 24232223 | Cap.Ceramic              | 0. 022MF Z 50V |
| C024                | 24538104 | Cap.Plastic              | 0. 1MF J 50V   |
| C025                | 24206010 | Cap.Electrolytic         | 1MF M 50V      |
| C026                | 24203100 | Cap.Electrolytic         | 10MF M 16V     |
| C028                | 24538563 | Cap.Plastic              | 0. 056MF J 50V |
| C029                | 24436050 | Cap.Ceramic              | 5PF J 50V      |
| C030                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C031                | 24085981 | Cap.Electrolytic         | 10MF M 16V     |
| C032                | 24212221 | Cap.Ceramic              | 220PF K 50V    |
| C033                | 24206010 | Cap.Electrolytic         | 1MF M 50V      |
| C034                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| C035                | 24203470 | Cap.Electrolytic         | 47MF M 16V     |
| C036                | 24206478 | Cap.Electrolytic         | 0. 47MF M 50V  |
| C037                | 24357151 | Cap.Ceramic              | 150PF J 50V    |
| C038                | 24436101 | Cap.Ceramic              | 100PF J 50V    |
| C039                | 24538104 | Cap.Plastic              | 0. 1MF J 50V   |
| C040                | 24436560 | Cap.Ceramic              | 56PF J 50V     |
| C041                | 24436430 | Cap.Ceramic              | 43PF J 50V     |
| C042                | 24232472 | Cap.Ceramic              | 4700PF Z 50V   |
| C045                | 24203220 | Cap.Electrolytic         | 22MF M 16V     |
| CA01                | 24202330 | Cap.Electrolytic         | 33MF M 10V     |
| CA02                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| CA03                | 24232102 | Cap.Ceramic              | 1000PF Z 50V   |
| CA04                | 24232102 | Cap.Ceramic              | 1000PF Z 50V   |
| CA05                | 24436240 | Cap.Ceramic              | 24PF J 50V     |
| CA06                | 24436240 | Cap.Ceramic              | 24PF J 50V     |
| CA07                | 24232103 | Cap.Ceramic              | 0. 01MF Z 50V  |
| CA08                | 24591104 | Cap.Plastic              | 0. 1MF J 50V   |
| CA09                | 24591103 | Cap.Plastic              | 0. 01MF J 50V  |
| CA10                | 24797101 | Cap.Electrolytic         | 100MF M 50V    |
| CD01                | 24206229 | Cap.Electrolytic         | 2. 2MF M 50V   |
| CD02                | 24203100 | Cap.Electrolytic         | 10MF M 16V     |
| CD61                | 24206229 | Cap.Electrolytic         | 2. 2MF M 50V   |
| CD62                | 24203100 | Cap.Electrolytic         | 10MF M 16V     |
| CD63                | 24206229 | Cap.Electrolytic         | 2. 2MF M 50V   |
| CD66                | 24591472 | Cap.Plastic              | 4700PF J 50V   |
| CD67                | 24591472 | Cap.Plastic              | 4700PF J 50V   |
| CD74                | 24203100 | Cap.Electrolytic         | 10MF M 16V     |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION      |       |   |      | LOCATION<br>NUMBER  | PART<br>NUMBER | DESCRIPTION               |         |          |      |
|--------------------|----------------|------------------|-------|---|------|---------------------|----------------|---------------------------|---------|----------|------|
| CD78               | 24203100       | Cap.Electrolytic | 10MF  | M | 16V  | RA10                | 24366122       | Res.Carbon                | 1. 2K   | J        | 1/6W |
| CN98               | 24203470       | Cap.Electrolytic | 47MF  | M | 16V  | RA11                | 24366564       | Res.Carbon                | 560K    | J        | 1/6W |
| CN99               | 24203101       | Cap.Electrolytic | 100MF | M | 16V  | RA12                | 24366473       | Res.Carbon                | 47K     | J        | 1/6W |
| RESISTORS          |                |                  |       |   |      | RA13                | 24366273       | Res.Carbon                | 27K     | J        | 1/6W |
| R001               | 24366201       | Res.Carbon       | 200   | J | 1/6W | RA14                | 24366562       | Res.Carbon                | 5. 6K   | J        | 1/6W |
| R002               | 24366332       | Res.Carbon       | 3. 3K | J | 1/6W | RA15                | 24366473       | Res.Carbon                | 47K     | J        | 1/6W |
| R003               | 24366162       | Res.Carbon       | 1. 6K | J | 1/6W | RA16                | 24366822       | Res.Carbon                | 8. 2K   | J        | 1/6W |
| R004               | 24366621       | Res.Carbon       | 620   | J | 1/6W | RA17                | 24366822       | Res.Carbon                | 8. 2K   | J        | 1/6W |
| R005               | 24366621       | Res.Carbon       | 620   | J | 1/6W | RA18                | 24366473       | Res.Carbon                | 47K     | J        | 1/6W |
| R007               | 24366331       | Res.Carbon       | 330   | J | 1/6W | RA19                | 24366363       | Res.Carbon                | 36K     | J        | 1/6W |
| R008               | 24366431       | Res.Carbon       | 430   | J | 1/6W | RA20                | 24366124       | Res.Carbon                | 120K    | J        | 1/6W |
| R009               | 24366431       | Res.Carbon       | 430   | J | 1/6W | RA21                | 24366363       | Res.Carbon                | 36K     | J        | 1/6W |
| R010               | 24366101       | Res.Carbon       | 100   | J | 1/6W | RA22                | 24366124       | Res.Carbon                | 120K    | J        | 1/6W |
| R011               | 24366510       | Res.Carbon       | 51    | J | 1/6W | RA23                | 24366332       | Res.Carbon                | 3. 3K   | J        | 1/6W |
| R013               | 24366102       | Res.Carbon       | 1K    | J | 1/6W | RD01                | 24366473       | Res.Carbon                | 47K     | J        | 1/6W |
| R014               | 24366103       | Res.Carbon       | 10K   | J | 1/6W | RD02                | 24366473       | Res.Carbon                | 47K     | J        | 1/6W |
| R015               | 24366202       | Res.Carbon       | 2K    | J | 1/6W | RD03                | 24366303       | Res.Carbon                | 30K     | J        | 1/6W |
| R016               | 24366562       | Res.Carbon       | 5. 6K | J | 1/6W | RD04                | 24366622       | Res.Carbon                | 6. 2K   | J        | 1/6W |
| R017               | 24366392       | Res.Carbon       | 3. 9K | J | 1/6W | RD05                | 24366272       | Res.Carbon                | 2. 7K   | J        | 1/6W |
| R018               | 24366222       | Res.Carbon       | 2. 2K | J | 1/6W | RD06                | 24366272       | Res.Carbon                | 2. 7K   | J        | 1/6W |
| R019               | 24366824       | Res.Carbon       | 820K  | J | 1/6W | RD07                | 24366113       | Res.Carbon                | 11K     | J        | 1/6W |
| R020               | 24366102       | Res.Carbon       | 1K    | J | 1/6W | RD54                | 24066983       | Res.Variable              | 5K      |          |      |
| R021               | 24366682       | Res.Carbon       | 6. 8K | J | 1/6W | RD62                | 24366103       | Res.Carbon                | 10K     | J        | 1/6W |
| R022               | 24366682       | Res.Carbon       | 6. 8K | J | 1/6W | RD63                | 24366473       | Res.Carbon                | 47K     | J        | 1/6W |
| R023               | 24366151       | Res.Carbon       | 150   | J | 1/6W | RD70                | 24366203       | Res.Carbon                | 20K     | J        | 1/6W |
| R024               | 24366102       | Res.Carbon       | 1K    | J | 1/6W | RD71                | 24366102       | Res.Carbon                | 1K      | J        | 1/6W |
| R025               | 24366102       | Res.Carbon       | 1K    | J | 1/6W | RD78                | 24366242       | Res.Carbon                | 2. 4K   | J        | 1/6W |
| R026               | 24366511       | Res.Carbon       | 510   | J | 1/6W | RD79                | 24366242       | Res.Carbon                | 2. 4K   | J        | 1/6W |
| R027               | 24366681       | Res.Carbon       | 680   | J | 1/6W | RD80                | 24366562       | Res.Carbon                | 5. 6K   | J        | 1/6W |
| R028               | 24366562       | Res.Carbon       | 5. 6K | J | 1/6W | RD81                | 24366562       | Res.Carbon                | 5. 6K   | J        | 1/6W |
| R029               | 24366103       | Res.Carbon       | 10K   | J | 1/6W | RD83                | 24366102       | Res.Carbon                | 1K      | J        | 1/6W |
| R030               | 24366104       | Res.Carbon       | 100K  | J | 1/6W | RD85                | 24366332       | Res.Carbon                | 3. 3K   | J        | 1/6W |
| R031               | 24380103       | Res.Carbon       | 10K   | J | 1/8W | RD86                | 24366102       | Res.Carbon                | 1K      | J        | 1/6W |
| R032               | 24366474       | Res.Carbon       | 470K  | J | 1/6W | RD87                | 24366101       | Res.Carbon                | 100     | J        | 1/6W |
| R033               | 24366103       | Res.Carbon       | 10K   | J | 1/6W | RD90                | 24366433       | Res.Carbon                | 43K     | J        | 1/6W |
| R034               | 24366132       | Res.Carbon       | 1. 3K | J | 1/6W | RD91                | 24366243       | Res.Carbon                | 24K     | J        | 1/6W |
| R035               | 24366152       | Res.Carbon       | 1. 5K | J | 1/6W | RD92                | 24366512       | Res.Carbon                | 5. 1K   | J        | 1/6W |
| R037               | 24366474       | Res.Carbon       | 470K  | J | 1/6W | RD93                | 24366432       | Res.Carbon                | 4. 3K   | J        | 1/6W |
| R038               | 24366564       | Res.Carbon       | 560K  | J | 1/6W | RD94                | 24366104       | Res.Carbon                | 100K    | J        | 1/6W |
| R039               | 24366224       | Res.Carbon       | 220K  | J | 1/6W | RN90                | 24380472       | Res.Carbon                | 4. 7K   | J        | 1/8W |
| R040               | 24366105       | Res.Carbon       | 1M    | J | 1/6W | RN91                | 24366102       | Res.Carbon                | 1K      | J        | 1/6W |
| R041               | 24366104       | Res.Carbon       | 100K  | J | 1/6W | RN92                | 24366472       | Res.Carbon                | 4. 7K   | J        | 1/6W |
| R042               | 24366304       | Res.Carbon       | 300K  | J | 1/6W | RN93                | 24366471       | Res.Carbon                | 470     | J        | 1/6W |
| R043               | 24366562       | Res.Carbon       | 5. 6K | J | 1/6W | RN94                | 24366103       | Res.Carbon                | 10K     | J        | 1/6W |
| R044               | 24366330       | Res.Carbon       | 33    | J | 1/6W | RN95                | 24366472       | Res.Carbon                | 4. 7K   | J        | 1/6W |
| R045               | 24366561       | Res.Carbon       | 560   | J | 1/6W | RN96                | 24366472       | Res.Carbon                | 4. 7K   | J        | 1/6W |
| R046               | 24366132       | Res.Carbon       | 1. 3K | J | 1/6W | RN97                | 24366471       | Res.Carbon                | 470     | J        | 1/6W |
| R047               | 24366331       | Res.Carbon       | 330   | J | 1/6W | RN98                | 24380471       | Res.Carbon                | 470     | J        | 1/8W |
| R048               | 24366472       | Res.Carbon       | 4. 7K | J | 1/6W | RN99                | 24366222       | Res.Carbon                | 2. 2K   | J        | 1/6W |
| R049               | 24366472       | Res.Carbon       | 4. 7K | J | 1/6W | MISCELLANEOUS       |                |                           |         |          |      |
| R052               | 24066983       | Res.Variable     | 5K    |   |      | H001                | 70121068       | Tuner.694FX2              |         |          |      |
| R060               | 24366162       | Res.Carbon       | 1. 6K | J | 1/6W | H003                | 23142535       | ANT Terminal.VT824        |         |          |      |
| R061               | 24366102       | Res.Carbon       | 1K    | J | 1/6W | HD01                | 70137126       | MTS Decoder Module        |         |          |      |
| R063               | 24366472       | Res.Carbon       | 4. 7K | J | 1/6W | PA03                | 70163071       | Phono Jack                |         |          |      |
| R064               | 24366472       | Res.Carbon       | 4. 7K | J | 1/6W | SA01                | 23145452       | Slide Switch.2C3P         |         |          |      |
| R065               | 24366104       | Res.Carbon       | 100K  | J | 1/6W | XA01                | 23153969       | Crystal                   |         |          |      |
| R066               | 24366102       | Res.Carbon       | 1K    | J | 1/6W | Z001                | A5610690       | Filter.F1032B.45. 75MHz   |         |          |      |
| R067               | 24366102       | Res.Carbon       | 1K    | J | 1/6W | Z002                | A5613161       | Filter.F1322B.41. 25MHz   |         |          |      |
| R068               | 24366112       | Res.Carbon       | 1. 1K | J | 1/6W | Z003                | 23107976       | Video Trap                | 4. 5MHz |          |      |
| R069               | 24366821       | Res.Carbon       | 820   | J | 1/6W | Z004                | 23107920       | Filter.4. 5MHz            |         |          |      |
| R070               | 24366912       | Res.Carbon       | 9. 1K | J | 1/6W | Z005                | 23107749       | Filter.TEM1007            |         |          |      |
| R071               | 24366472       | Res.Carbon       | 4. 7K | J | 1/6W | Z006                | 23107749       | Filter.TEM1007            |         |          |      |
| R072               | 24366472       | Res.Carbon       | 4. 7K | J | 1/6W | Z007                | 23107749       | Filter.TEM1007            |         |          |      |
| R073               | 24366162       | Res.Carbon       | 1. 6K | J | 1/6W | Z008                | 23107749       | Filter.TEM1007            |         |          |      |
| R081               | 24366332       | Res.Carbon       | 3. 3K | J | 1/6W |                     |                |                           |         |          |      |
| ΔR090              | 24942155       | Res.Composition  | 1. 5M | J | 1/2W | UG01                | 70197357       | P C Board Assy.SW Control |         |          |      |
| RA01               | 24366472       | Res.Carbon       | 4. 7K | J | 1/6W | INTEGRATED CIRCUITS |                |                           |         |          |      |
| RA02               | 24366472       | Res.Carbon       | 4. 7K | J | 1/6W | ICG05               | 70119621       | IC                        |         | NJM2068S |      |
| RA03               | 24366472       | Res.Carbon       | 4. 7K | J | 1/6W | CAPACITORS          |                |                           |         |          |      |
| RA04               | 24366201       | Res.Carbon       | 200   | J | 1/6W | CG10                | 24203101       | Cap.Electrolytic          | 100MF   | M        | 16V  |
| RA05               | 24366151       | Res.Carbon       | 150   | J | 1/6W | CG11                | 24203101       | Cap.Electrolytic          | 100MF   | M        | 16V  |
| RA06               | 24366562       | Res.Carbon       | 5. 6K | J | 1/6W | RESISTORS           |                |                           |         |          |      |
| RA07               | 24366823       | Res.Carbon       | 82K   | J | 1/6W | R257                | 24069645       | Res.Variable              | 10K     |          |      |
| RA08               | 24366561       | Res.Carbon       | 560   | J | 1/6W | R556                | 24069653       | Res.Variable              | 500K    |          |      |
| RA09               | 24366152       | Res.Carbon       | 1. 5K | J | 1/6W | RG10                | 24360101       | Res.Carbon                | 100     | J        | 1/8W |

| LOCATION<br>NUMBER        | PART<br>NUMBER | DESCRIPTION       |       |        |
|---------------------------|----------------|-------------------|-------|--------|
| RG11                      | 24366272       | Res.Carbon        | 2. 7K | J 1/6W |
| RG12                      | 24366102       | Res.Carbon        | 1K    | J 1/6W |
| RG13                      | 24366102       | Res.Carbon        | 1K    | J 1/6W |
| RG14                      | 24366272       | Res.Carbon        | 2. 7K | J 1/6W |
| RG15                      | 24366101       | Res.Carbon        | 100   | J 1/6W |
| RG52                      | 24069549       | Res.Variable      | 20K   |        |
| RG53                      | 24069550       | Res.Variable      | 5K    |        |
| M I S C E L L A N E O U S |                |                   |       |        |
| S201                      | 23145605       | Slide Switch.2C3P |       |        |
| SG02                      | 23145605       | Slide Switch.2C3P |       |        |
| SG07                      | 23145533       | Slide Switch.2C2P |       |        |
| SL07                      | 23145510       | Push Switch.1C1P  |       |        |
| SL08                      | 23145510       | Push Switch.1C1P  |       |        |
| SL11                      | 23145510       | Push Switch.1C1P  |       |        |
| SX18                      | 23145510       | Push Switch.1C1P  |       |        |

U202 70197355 P C Board Assy.Main

#### I N T E G R A T E D C I R C U I T S

|       |          |    |              |
|-------|----------|----|--------------|
| IC101 | B0379070 | IC | TA8607P      |
| IC201 | B0379245 | IC | TA8624N      |
| IC202 | B0379060 | IC | TA8606N      |
| IC203 | B0589580 | IC | TL8708P      |
| IC301 | B0325400 | IC | TA7348P      |
| IC302 | B0325420 | IC | TA7350P      |
| IC401 | B0379040 | IC | TA8604N      |
| IC402 | B0325570 | IC | TA7365P      |
| IC501 | B0272639 | IC | TD6361N-D2   |
| IC502 | B0351500 | IC | TA75902P     |
| IC503 | 70119581 | IC | NJM2902N     |
| IC504 | B0480815 | IC | TC5081AP     |
| IC505 | B0475382 | IC | TC4538BP     |
| IC506 | B0470662 | IC | TC4066BP     |
| IC507 | B0470303 | IC | TC4030BP     |
| IC508 | B0475382 | IC | TC4538BP     |
| IC509 | 70119423 | IC | BA222        |
| IC601 | B0517826 | IC | 47C460AN9438 |
| IC602 | B0320635 | IC | TA7288P      |
| IC603 | B0320440 | IC | TA7267P      |
| IC604 | B0347230 | IC | TA75339P     |

#### T R A N S I S T O R S

|      |          |            |            |
|------|----------|------------|------------|
| Q102 | A6332430 | Transistor | 2SC2458-Y  |
| Q103 | A6534430 | Transistor | 2SA1048-Y  |
| Q104 | A6534430 | Transistor | 2SA1048-Y  |
| Q105 | A6002020 | Transistor | RN1202     |
| Q106 | A6002040 | Transistor | RN1204     |
| Q107 | A6332430 | Transistor | 2SC2458-Y  |
| Q109 | A6002020 | Transistor | RN1202     |
| Q110 | A6002020 | Transistor | RN1202     |
| Q204 | A6332430 | Transistor | 2SC2458-Y  |
| Q206 | A6002030 | Transistor | RN1203     |
| Q209 | A6534430 | Transistor | 2SA1048-Y  |
| Q210 | A6002020 | Transistor | RN1202     |
| Q211 | A6332430 | Transistor | 2SC2458-Y  |
| Q212 | A6012050 | Transistor | RN2205     |
| Q213 | A6002020 | Transistor | RN1202     |
| Q214 | A6534430 | Transistor | 2SA1048-Y  |
| Q216 | A6534430 | Transistor | 2SA1048-Y  |
| Q217 | A6332430 | Transistor | 2SC2458-Y  |
| Q218 | A6332430 | Transistor | 2SC2458-Y  |
| Q219 | A6332430 | Transistor | 2SC2458-Y  |
| Q221 | A6332540 | Transistor | 2SC2668-Y  |
| Q304 | A6534040 | Transistor | 2SA1015-Y  |
| Q305 | A6534430 | Transistor | 2SA1048-Y  |
| Q306 | A6332430 | Transistor | 2SC2458-Y  |
| Q307 | A6332540 | Transistor | 2SC2668-Y  |
| Q308 | A6332540 | Transistor | 2SC2668-Y  |
| Q309 | A6332540 | Transistor | 2SC2668-Y  |
| Q310 | A6332540 | Transistor | 2SC2668-Y  |
| Q312 | A6012020 | Transistor | RN2202     |
| Q313 | A6332450 | Transistor | 2SC2458-BL |
| Q314 | A6012020 | Transistor | RN2202     |
| Q315 | A6332450 | Transistor | 2SC2458-BL |
| Q316 | A6002040 | Transistor | RN1204     |
| Q317 | A6332450 | Transistor | 2SC2458-BL |
| Q318 | A6534430 | Transistor | 2SA1048-Y  |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |           |
|--------------------|----------------|-------------|-----------|
| Q322               | A6002020       | Transistor  | RN1202    |
| Q323               | A6002020       | Transistor  | RN1202    |
| Q324               | A6002020       | Transistor  | RN1202    |
| Q325               | A6002020       | Transistor  | RN1202    |
| Q326               | A6332430       | Transistor  | 2SC2458-Y |
| Q330               | A6002020       | Transistor  | RN1202    |
| Q331               | A6002020       | Transistor  | RN1202    |
| Q403               | A6332430       | Transistor  | 2SC2458-Y |
| Q404               | A6332430       | Transistor  | 2SC2458-Y |
| Q405               | A6534430       | Transistor  | 2SA1048-Y |
| Q406               | A6534430       | Transistor  | 2SA1048-Y |
| Q407               | A6002040       | Transistor  | RN1204    |
| Q408               | A6332430       | Transistor  | 2SC2458-Y |
| Q409               | A6002040       | Transistor  | RN1204    |
| Q411               | A6332430       | Transistor  | 2SC2458-Y |
| Q415               | A6319300       | Transistor  | 2SC1959-Y |
| Q416               | A6534430       | Transistor  | 2SA1048-Y |
| Q511               | A6012040       | Transistor  | RN2204    |
| Q512               | A6012040       | Transistor  | RN2204    |
| Q513               | A6002040       | Transistor  | RN1204    |
| Q514               | A6002040       | Transistor  | RN1204    |
| Q515               | A6002040       | Transistor  | RN1204    |
| Q516               | A6844100       | Transistor  | 2SD686    |
| Q517               | A6841900       | Transistor  | 2SD549    |
| Q518               | A6533240       | Transistor  | 2SA966-Y  |
| Q519               | A6012040       | Transistor  | RN2204    |
| Q520               | A6002040       | Transistor  | RN1204    |
| Q521               | A6332430       | Transistor  | 2SC2458-Y |
| Q522               | A6002030       | Transistor  | RN1203    |
| Q523               | A6012040       | Transistor  | RN2204    |
| Q524               | A6012040       | Transistor  | RN2204    |
| Q525               | A6534430       | Transistor  | 2SA1048-Y |
| Q526               | A6012040       | Transistor  | RN2204    |
| Q527               | A6012040       | Transistor  | RN2204    |
| Q528               | A6002040       | Transistor  | RN1204    |
| Q529               | A6012040       | Transistor  | RN2204    |
| Q530               | A6012040       | Transistor  | RN2204    |
| Q531               | A6012040       | Transistor  | RN2204    |
| Q532               | A6002040       | Transistor  | RN1204    |
| Q533               | A6002030       | Transistor  | RN1203    |
| Q534               | A6002030       | Transistor  | RN1203    |
| Q535               | A6002040       | Transistor  | RN1204    |
| Q536               | A6002040       | Transistor  | RN1204    |
| Q538               | A6002040       | Transistor  | RN1204    |
| Q539               | A6332430       | Transistor  | 2SC2458-Y |
| Q541               | A6002040       | Transistor  | RN1204    |
| Q542               | A6012040       | Transistor  | RN2204    |
| Q544               | A6534430       | Transistor  | 2SA1048-Y |
| Q545               | A6534430       | Transistor  | 2SA1048-Y |
| Q549               | A6012040       | Transistor  | RN2204    |
| Q550               | A6012040       | Transistor  | RN2204    |
| Q551               | A6002040       | Transistor  | RN1204    |
| Q555               | A6002040       | Transistor  | RN1204    |
| Q599               | A6002040       | Transistor  | RN1204    |
| Q609               | A6534430       | Transistor  | 2SA1048-Y |
| Q610               | A6534430       | Transistor  | 2SA1048-Y |
| Q613               | A6533240       | Transistor  | 2SA966-Y  |
| Q614               | A6534430       | Transistor  | 2SA1048-Y |
| Q615               | A6534430       | Transistor  | 2SA1048-Y |
| Q616               | A6533240       | Transistor  | 2SA966-Y  |
| Q617               | A6533240       | Transistor  | 2SA966-Y  |
| Q618               | A6002060       | Transistor  | RN1206    |
| Q619               | A6002010       | Transistor  | RN1201    |
| Q620               | A6325540       | Transistor  | SC2236-Y  |
| Q621               | A6002060       | Transistor  | RN1206    |
| Q622               | A6002030       | Transistor  | RN1203    |
| Q624               | A6012030       | Transistor  | RN2203    |
| Q625               | A6633620       | Transistor  | 2SB834-Y  |
| Q626               | A6332430       | Transistor  | 2SC2458-Y |
| Q627               | A6002010       | Transistor  | RN1201    |
| Q628               | A6002030       | Transistor  | RN1203    |
| Q629               | A6002030       | Transistor  | RN1203    |
| Q630               | A6002010       | Transistor  | RN1201    |
| Q631               | A6002020       | Transistor  | RN1202    |
| Q633               | A6332430       | Transistor  | 2SC2458-Y |



| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |  |
|--------------------|----------------|-------------|--|
|--------------------|----------------|-------------|--|

|      |          |            |           |
|------|----------|------------|-----------|
| Q635 | A6012040 | Transistor | RN2204    |
| Q639 | A6012040 | Transistor | RN2204    |
| Q640 | A6332430 | Transistor | 2SC2458-Y |
| Q642 | A6002010 | Transistor | RN1201    |
| Q643 | A6002040 | Transistor | RN1204    |
| Q644 | A6012040 | Transistor | RN2204    |
| Q645 | A6002050 | Transistor | RN1205    |

#### DIODES

|      |          |             |            |
|------|----------|-------------|------------|
| D201 | A7160570 | Diode       | ISS176     |
| D202 | A7160570 | Diode       | ISS176     |
| D203 | A7151500 | Diode       | ISS201     |
| D205 | A7110159 | Diode,Zener | 05Z 7. 5-X |
| D206 | A7151450 | Diode       | ISS200     |
| D207 | A7151500 | Diode       | ISS201     |
| D208 | A7160570 | Diode       | ISS176     |
| D303 | A7160570 | Diode       | ISS176     |
| D304 | A7160570 | Diode       | ISS176     |
| D307 | A7151500 | Diode       | ISS201     |
| D308 | A7151450 | Diode       | ISS200     |
| D403 | A7160570 | Diode       | ISS176     |
| D404 | A7160570 | Diode       | ISS176     |
| D501 | A7160570 | Diode       | ISS176     |
| D503 | A7151500 | Diode       | ISS201     |
| D504 | A7152800 | Diode       | ISS227     |
| D505 | A7160570 | Diode       | ISS176     |
| D506 | A7160570 | Diode       | ISS176     |
| D507 | A7152800 | Diode       | ISS227     |
| D508 | A7160570 | Diode       | ISS176     |
| D509 | A7152800 | Diode       | ISS227     |
| D510 | A7152800 | Diode       | ISS227     |
| D511 | A7160570 | Diode       | ISS176     |
| D512 | A7110040 | Diode,Zener | 05Z5.1-X   |
| D513 | A7160570 | Diode       | ISS176     |
| D514 | A7160570 | Diode       | ISS176     |
| D515 | A7160570 | Diode       | ISS176     |
| D518 | A7160570 | Diode       | ISS176     |
| D519 | A7160570 | Diode       | ISS176     |
| D520 | A7160570 | Diode       | ISS176     |
| D602 | A7160570 | Diode       | ISS176     |
| D605 | A7160570 | Diode       | ISS176     |
| D606 | A7160570 | Diode       | ISS176     |
| D607 | A7160570 | Diode       | ISS176     |
| D609 | A7160570 | Diode       | ISS176     |
| D610 | A7160570 | Diode       | ISS176     |
| D611 | A7160570 | Diode       | ISS176     |
| D612 | A7110462 | Diode,Zener | 05Z 13-Y   |
| D613 | A7160570 | Diode       | ISS176     |
| D614 | A7160570 | Diode       | ISS176     |
| D615 | A7160570 | Diode       | ISS176     |
| D616 | A7160570 | Diode       | ISS176     |
| D617 | A7160570 | Diode       | ISS176     |
| DA99 | 23115922 | Diode,Zener | UPC574J    |

#### COILS

|      |          |              |           |
|------|----------|--------------|-----------|
| L109 | 23238706 | Coil,Peaking | TRF4470AJ |
| L111 | 23237974 | Coil,Peaking | TRF4121AC |
| L112 | 23237987 | Coil,Peaking | TRF4100AC |
| L114 | 23237981 | Coil,Peaking | TRF4330AC |
| L115 | 23238702 | Coil,Peaking | TRF4101AC |
| L201 | 23238702 | Coil,Peaking | TRF4101AC |
| L202 | 23237911 | Coil,Peaking | TRF4201AC |
| L203 | 23238904 | Coil,Peaking | TRF4331AC |
| L204 | 23238906 | Coil,Peaking | TRF4221AC |
| L205 | 23239835 | Coil,Peaking | TRF4109AJ |
| L206 | 23261984 | Coil,Choke   | HC3035    |
| L207 | 23238702 | Coil,Peaking | TRF4101AC |
| L208 | 23238707 | Coil,Peaking | TRF4390AJ |
| L209 | 23238706 | Coil,Peaking | TRF4470AJ |
| L210 | 23237972 | Coil,Peaking | TRF4181AC |
| L211 | 23237973 | Coil,Peaking | TRF4151AC |
| L212 | 23237975 | Coil,Peaking | TRF4101AC |
| L301 | 23238702 | Coil,Peaking | TRF4101AC |
| L302 | 23238706 | Coil,Peaking | TRF4470AJ |
| L401 | 23237984 | Coil,Peaking | TRF4180AC |
| L402 | 23237987 | Coil,Peaking | TRF4100AC |
| L403 | 23237979 | Coil,Peaking | TRF4470AC |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |  |
|--------------------|----------------|-------------|--|
|--------------------|----------------|-------------|--|

|      |          |               |           |
|------|----------|---------------|-----------|
| L404 | 23237974 | Coil,Peaking  | TRF4121AC |
| L405 | 23238904 | Coil,Peaking  | TRF4331AC |
| L406 | 23237984 | Coil,Peaking  | TRF4180AC |
| L407 | 23238715 | Coil,Peaking  | TRF4829AJ |
| L409 | 23238714 | Coil,Peaking  | TRF4100AJ |
| L410 | 23238714 | Coil,Peaking  | TRF4100AJ |
| L411 | 23237976 | Coil,Peaking  | TRF4820AC |
| L412 | 23238920 | Coil,Peaking  | TRF4150AC |
| L454 | 23232959 | Coil,Variable | TRF3060   |
| L601 | 23238653 | Coil,Peaking  | TRF4470AJ |

#### CAPACITORS

|      |          |                  |          |        |
|------|----------|------------------|----------|--------|
| C130 | 24206478 | Cap.Electrolytic | 0. 47MF  | M 50V  |
| C131 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C132 | 24473360 | Cap.Ceramic      | 36PF     | J 50V  |
| C133 | 24474102 | Cap.Ceramic      | 1000PF   | K 50V  |
| C134 | 24474102 | Cap.Ceramic      | 1000PF   | K 50V  |
| C135 | 24851104 | Cap.Ceramic      | 0. 1MF   | K 25V  |
| C136 | 24201220 | Cap.Electrolytic | 22MF     | M 6.3V |
| C137 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C138 | 24436561 | Cap.Ceramic      | 560PF    | J 50V  |
| C139 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C140 | 24436121 | Cap.Ceramic      | 120PF    | J 50V  |
| C141 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C143 | 24436220 | Cap.Ceramic      | 22PF     | J 50V  |
| C144 | 24851683 | Cap.Ceramic      | 0. 068MF | K 25V  |
| C201 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C202 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C203 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C204 | 24473130 | Cap.Ceramic      | 13PF     | J 50V  |
| C205 | 24436151 | Cap.Ceramic      | 150PF    | J 50V  |
| C206 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C207 | 24473150 | Cap.Ceramic      | 15PF     | J 50V  |
| C208 | 24436151 | Cap.Ceramic      | 150PF    | J 50V  |
| C209 | 24851104 | Cap.Ceramic      | 0. 1MF   | K 25V  |
| C210 | 24436101 | Cap.Ceramic      | 100PF    | J 50V  |
| C211 | 24851822 | Cap.Ceramic      | 8200PF   | K 25V  |
| C212 | 24851103 | Cap.Ceramic      | 0. 01MF  | K 25V  |
| C213 | 24436151 | Cap.Ceramic      | 150PF    | J 50V  |
| C214 | 24851104 | Cap.Ceramic      | 0. 1MF   | K 25V  |
| C215 | 24203100 | Cap.Electrolytic | 10MF     | M 16V  |
| C216 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C217 | 24206478 | Cap.Electrolytic | 0. 47MF  | M 50V  |
| C218 | 24205479 | Cap.Electrolytic | 4. 7MF   | M 35V  |
| C219 | 24206010 | Cap.Electrolytic | 1MF      | M 50V  |
| C220 | 24436101 | Cap.Ceramic      | 100PF    | J 50V  |
| C221 | 24202101 | Cap.Electrolytic | 100MF    | M 10V  |
| C222 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C223 | 24436301 | Cap.Ceramic      | 300PF    | J 50V  |
| C224 | 24206478 | Cap.Electrolytic | 0. 47MF  | M 50V  |
| C225 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C226 | 24206010 | Cap.Electrolytic | 1MF      | M 50V  |
| C227 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C228 | 24473470 | Cap.Ceramic      | 47PF     | J 50V  |
| C229 | 24205479 | Cap.Electrolytic | 4. 7MF   | M 35V  |
| C230 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C231 | 24201470 | Cap.Electrolytic | 47MF     | M 6.3V |
| C232 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C233 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C234 | 24473390 | Cap.Ceramic      | 39PF     | J 50V  |
| C235 | 24206478 | Cap.Electrolytic | 0. 47MF  | M 50V  |
| C238 | 24473470 | Cap.Ceramic      | 47PF     | J 50V  |
| C239 | 24201220 | Cap.Electrolytic | 22MF     | M 6.3V |
| C240 | 24205479 | Cap.Electrolytic | 4. 7MF   | M 35V  |
| C241 | 24538474 | Cap.Plastic      | 0. 47MF  | J 50V  |
| C242 | 24206010 | Cap.Electrolytic | 1MF      | M 50V  |
| C243 | 24203100 | Cap.Electrolytic | 10MF     | M 16V  |
| C244 | 24436331 | Cap.Ceramic      | 330PF    | J 50V  |
| C245 | 24473430 | Cap.Ceramic      | 43PF     | J 50V  |
| C246 | 24201470 | Cap.Electrolytic | 47MF     | M 6.3V |
| C247 | 24474102 | Cap.Ceramic      | 1000PF   | K 50V  |
| C248 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C249 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C260 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C261 | 24203470 | Cap.Electrolytic | 47MF     | M 16V  |
| C262 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION      |          |        |
|--------------------|-------------------|------------------|----------|--------|
| C263               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C264               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C266               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C267               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C268               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C269               | 24205479          | Cap.Electrolytic | 4. 7MF   | M 35V  |
| C270               | 24473390          | Cap.Ceramic      | 39PF     | J 50V  |
| C271               | 24436101          | Cap.Ceramic      | 100PF    | J 50V  |
| C272               | 244733270         | Cap.Ceramic      | 27PF     | J 50V  |
| C273               | 24206478          | Cap.Electrolytic | 0. 47MF  | M 50V  |
| C274               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C275               | 24474910          | Cap.Ceramic      | 91PF     | K 50V  |
| C276               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C277               | 24473680          | Cap.Ceramic      | 68PF     | J 50V  |
| C278               | 24473680          | Cap.Ceramic      | 68PF     | J 50V  |
| C279               | 24201220          | Cap.Electrolytic | 22MF     | M 6.3V |
| C281               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C282               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C283               | 24473270          | Cap.Ceramic      | 27PF     | J 50V  |
| C298               | 24436100          | Cap.Ceramic      | 10PF     | J 50V  |
| C299               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C301               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| C302               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| C303               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| C304               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C305               | 24851223          | Cap.Ceramic      | 0. 022MF | K 25V  |
| C306               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C307               | 24538104          | Cap.Plastic      | 0. 1MF   | J 50V  |
| C308               | 24474102          | Cap.Ceramic      | 1000PF   | K 50V  |
| C309               | 24793471          | Cap.Electrolytic | 470MF    | M 10V  |
| C310               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C311               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C312               | 24473360          | Cap.Ceramic      | 36PF     | J 50V  |
| C313               | 24436181          | Cap.Ceramic      | 180PF    | J 50V  |
| C315               | 24202101          | Cap.Electrolytic | 100MF    | M 10V  |
| C317               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| C322               | 24202101          | Cap.Electrolytic | 100MF    | M 10V  |
| C323               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C324               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C325               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C326               | 24202101          | Cap.Electrolytic | 100MF    | M 10V  |
| C327               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C328               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C330               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C401               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C402               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C403               | 24340470          | Cap.Ceramic      | 47PF     | J 50V  |
| C404               | 24473270          | Cap.Ceramic      | 27PF     | J 50V  |
| C405               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C406               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C407               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C408               | 24851222          | Cap.Ceramic      | 2200PF   | K 25V  |
| C409               | 24353390          | Cap.Ceramic      | 39PF     | J 50V  |
| C410               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C411               | 24353510          | Cap.Ceramic      | 51PF     | J 50V  |
| C412               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C413               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C414               | 24436201          | Cap.Ceramic      | 200PF    | J 50V  |
| C415               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C416               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C417               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C419               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C420               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C421               | 24591472          | Cap.Plastic      | 4700PF   | J 50V  |
| C422               | 24591472          | Cap.Plastic      | 4700PF   | J 50V  |
| C423               | 24591272          | Cap.Plastic      | 2700PF   | J 50V  |
| C424               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C425               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C426               | 24436821          | Cap.Ceramic      | 820PF    | J 50V  |
| C427               | 24436331          | Cap.Ceramic      | 330PF    | J 50V  |
| C428               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C429               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C430               | 24436220          | Cap.Ceramic      | 22PF     | J 50V  |
| C431               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C432               | 24538823          | Cap.Plastic      | 0. 082MF | J 50V  |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION      |          |        |
|--------------------|-------------------|------------------|----------|--------|
| C433               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C434               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C435               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C436               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C437               | 24436101          | Cap.Ceramic      | 100PF    | J 50V  |
| C438               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C439               | 24205479          | Cap.Electrolytic | 4. 7MF   | M 35V  |
| C440               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C441               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C442               | 24473180          | Cap.Ceramic      | 18PF     | J 50V  |
| C443               | 24474821          | Cap.Ceramic      | 820PF    | K 50V  |
| C444               | 24232223          | Cap.Ceramic      | 0. 022MF | Z 50V  |
| C445               | 24202101          | Cap.Electrolytic | 100MF    | M 10V  |
| C446               | 24436331          | Cap.Ceramic      | 330PF    | J 50V  |
| C447               | 24436271          | Cap.Ceramic      | 270PF    | J 50V  |
| C448               | 24203100          | Cap.Electrolytic | 10MF     | M 16V  |
| C460               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C461               | 24436510          | Cap.Ceramic      | 51PF     | J 50V  |
| C501               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C502               | 24591103          | Cap.Plastic      | 0. 01MF  | J 50V  |
| C503               | 24591222          | Cap.Plastic      | 2200PF   | J 50V  |
| C504               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C505               | 24206229          | Cap.Electrolytic | 2. 2MF   | M 50V  |
| C506               | 24538224          | Cap.Plastic      | 0. 22MF  | J 50V  |
| C507               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C508               | 24617993          | Cap.Electrolytic | 1MF      | M 50V  |
| C509               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C510               | 24591103          | Cap.Plastic      | 0. 01MF  | J 50V  |
| C511               | 24203100          | Cap.Electrolytic | 10MF     | M 16V  |
| C512               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C513               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C514               | 24591223          | Cap.Plastic      | 0. 022MF | J 50V  |
| C515               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C517               | 24591184          | Cap.Plastic      | 0. 18MF  | J 50V  |
| C518               | 24538124          | Cap.Plastic      | 0. 12MF  | J 50V  |
| C519               | 24591683          | Cap.Plastic      | 0. 068MF | J 50V  |
| C521               | 24591563          | Cap.Plastic      | 0. 053MF | J 50V  |
| C522               | 24591753          | Cap.Plastic      | 0. 075MF | J 50V  |
| C523               | 24591103          | Cap.Plastic      | 0. 01MF  | J 50V  |
| C524               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C525               | 24203100          | Cap.Electrolytic | 10MF     | M 16V  |
| C526               | 24591103          | Cap.Plastic      | 0. 01MF  | J 50V  |
| C527               | 24617993          | Cap.Electrolytic | 1MF      | M 50V  |
| C528               | 24206478          | Cap.Electrolytic | 0. 47MF  | M 50V  |
| C530               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| C531               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C532               | 24203100          | Cap.Electrolytic | 10MF     | M 16V  |
| C533               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| C537               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C538               | 24436101          | Cap.Ceramic      | 100PF    | J 50V  |
| C539               | 24203100          | Cap.Electrolytic | 10MF     | M 16V  |
| C540               | 24591102          | Cap.Plastic      | 1000PF   | J 50V  |
| C541               | 24591473          | Cap.Plastic      | 0. 047MF | J 50V  |
| C542               | 24212102          | Cap.Ceramic      | 1000PF   | K 50V  |
| C543               | 24591222          | Cap.Plastic      | 2200PF   | J 50V  |
| C544               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C545               | 24436121          | Cap.Ceramic      | 120PF    | J 50V  |
| C546               | 24538274          | Cap.Plastic      | 0. 27MF  | J 50V  |
| C547               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| C548               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C549               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C550               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C551               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C560               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C601               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C602               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C604               | 24436330          | Cap.Ceramic      | 33PF     | J 50V  |
| C605               | 24436330          | Cap.Ceramic      | 33PF     | J 50V  |
| C606               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| C608               | 24794470          | Cap.Electrolytic | 47MF     | M 16V  |
| C609               | 24203470          | Cap.Electrolytic | 47MF     | M 16V  |
| C610               | 24204470          | Cap.Electrolytic | 47MF     | M 25V  |
| C611               | 24205100          | Cap.Electrolytic | 10MF     | M 35V  |
| C612               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |
| C613               | 24232103          | Cap.Ceramic      | 0. 01MF  | Z 50V  |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION      |          |        | LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION    |       |        |
|--------------------|----------------|------------------|----------|--------|--------------------|----------------|----------------|-------|--------|
| C614               | 24232103       | Cap.Ceramic      | 0. 01MF  | Z 50V  | R246               | 24366222       | Res.Carbon     | 2. 2K | J 1/6W |
| C615               | 24232223       | Cap.Ceramic      | 0. 022MF | Z 50V  | R247               | 24366101       | Res.Carbon     | 100   | J 1/6W |
| C616               | 24232223       | Cap.Ceramic      | 0. 022MF | Z 50V  | R248               | 24366272       | Res.Carbon     | 2. 7K | J 1/6W |
| C617               | 24232223       | Cap.Ceramic      | 0. 022MF | Z 50V  | R249               | 24366681       | Res.Carbon     | 680   | J 1/6W |
| C618               | 24232223       | Cap.Ceramic      | 0. 022MF | Z 50V  | R251               | 24066951       | Res.Variable   | 20K   |        |
| C621               | 24793221       | Cap.Electrolytic | 220MF    | M 10V  | R252               | 24066952       | Res.Variable   | 10K   |        |
| C622               | 24206108       | Cap.Electrolytic | 0.1MF    | M 50V  | R253               | 24066952       | Res.Variable   | 10K   |        |
| C625               | 24206478       | Cap.Electrolytic | 0. 47MF  | M 50V  | R254               | 24066952       | Res.Variable   | 10K   |        |
| C629               | 24794470       | Cap.Electrolytic | 47MF     | M 16V  | R255               | 24066957       | Res.Variable   | 200   |        |
| C698               | 24206479       | Cap.Electrolytic | 4. 7MF   | M 50V  | R256               | 24066954       | Res.Variable   | 2K    |        |
| C699               | 24232223       | Cap.Ceramic      | 0. 022MF | Z 50V  | R257               | 24066952       | Res.Variable   | 10K   |        |
| CD99               | 24474102       | Cap.Ceramic      | 1000PF   | K 50V  | R261               | 24366122       | Res.Carbon     | 1. 2K | J 1/6W |
| RESISTORS          |                |                  |          |        | R262               | 24366392       | Res.Carbon     | 3. 9K | J 1/6W |
| R138               | 24366821       | Res.Carbon       | 820      | J 1/6W | R263               | 24366203       | Res.Carbon     | 20K   | J 1/6W |
| R139               | 24366102       | Res.Carbon       | 1K       | J 1/6W | R264               | 24366621       | Res.Carbon     | 620   | J 1/6W |
| R140               | 24366103       | Res.Carbon       | 10K      | J 1/6W | R265               | 24366751       | Res.Carbon     | 750   | J 1/6W |
| R141               | 24366272       | Res.Carbon       | 2. 7K    | J 1/6W | R266               | 24000952       | Res.Thermistor | 3K    |        |
| R142               | 24366272       | Res.Carbon       | 2. 7K    | J 1/6W | R268               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R146               | 24366271       | Res.Carbon       | 270      | J 1/6W | R269               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R147               | 24366102       | Res.Carbon       | 1K       | J 1/6W | R270               | 24366561       | Res.Carbon     | 560   | J 1/6W |
| R148               | 24366102       | Res.Carbon       | 1K       | J 1/6W | R271               | 24366561       | Res.Carbon     | 560   | J 1/6W |
| R160               | 24366471       | Res.Carbon       | 470      | J 1/6W | R272               | 24366153       | Res.Carbon     | 15K   | J 1/6W |
| R161               | 24366151       | Res.Carbon       | 150      | J 1/6W | R273               | 24366103       | Res.Carbon     | 10K   | J 1/6W |
| R162               | 24366471       | Res.Carbon       | 470      | J 1/6W | R274               | 24366471       | Res.Carbon     | 470   | J 1/6W |
| R163               | 24366471       | Res.Carbon       | 470      | J 1/6W | R275               | 24366681       | Res.Carbon     | 680   | J 1/6W |
| R164               | 24366102       | Res.Carbon       | 1K       | J 1/6W | R276               | 24366222       | Res.Carbon     | 2. 2K | J 1/6W |
| R165               | 24366821       | Res.Carbon       | 820      | J 1/6W | R277               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R166               | 24366102       | Res.Carbon       | 1K       | J 1/6W | R278               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R167               | 24366102       | Res.Carbon       | 1K       | J 1/6W | R279               | 24366470       | Res.Carbon     | 47    | J 1/6W |
| R168               | 24366102       | Res.Carbon       | 1K       | J 1/6W | R280               | 24366681       | Res.Carbon     | 680   | J 1/6W |
| R169               | 24366751       | Res.Carbon       | 750      | J 1/6W | R281               | 24366392       | Res.Carbon     | 3. 9K | J 1/6W |
| R170               | 24366152       | Res.Carbon       | 1. 5K    | J 1/6W | R283               | 24366821       | Res.Carbon     | 820   | J 1/6W |
| R201               | 24366103       | Res.Carbon       | 10K      | J 1/6W | R288               | 24366155       | Res.Carbon     | 1. 5M | J 1/6W |
| R202               | 24366103       | Res.Carbon       | 10K      | J 1/6W | R299               | 24360222       | Res.Carbon     | 2. 2K | J 1/8W |
| R203               | 24366332       | Res.Carbon       | 3. 3K    | J 1/6W | R301               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R204               | 24366331       | Res.Carbon       | 330      | J 1/6W | R302               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R205               | 24366272       | Res.Carbon       | 2. 7K    | J 1/6W | R306               | 24366472       | Res.Carbon     | 4. 7K | J 1/6W |
| R206               | 24366332       | Res.Carbon       | 3. 3K    | J 1/6W | R307               | 24366750       | Res.Carbon     | 75    | J 1/6W |
| R207               | 24366331       | Res.Carbon       | 330      | J 1/6W | R308               | 24376271       | Res.Carbon     | 270   | J 1/2W |
| R208               | 24366621       | Res.Carbon       | 620      | J 1/6W | R309               | 24366243       | Res.Carbon     | 24K   | J 1/6W |
| R209               | 24366274       | Res.Carbon       | 270K     | J 1/6W | R311               | 24366222       | Res.Carbon     | 2. 2K | J 1/6W |
| R210               | 24366302       | Res.Carbon       | 3K       | J 1/6W | R312               | 24366824       | Res.Carbon     | 820K  | J 1/6W |
| R211               | 24366823       | Res.Carbon       | 82K      | J 1/6W | R313               | 24360203       | Res.Carbon     | 20K   | J 1/8W |
| R212               | 24366624       | Res.Carbon       | 620K     | J 1/6W | R314               | 24366750       | Res.Carbon     | 75    | J 1/6W |
| R213               | 24366681       | Res.Carbon       | 680      | J 1/6W | R315               | 24366182       | Res.Carbon     | 1. 8K | J 1/6W |
| R214               | 24366121       | Res.Carbon       | 120      | J 1/6W | R316               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R215               | 24366564       | Res.Carbon       | 560K     | J 1/6W | R317               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R216               | 24366474       | Res.Carbon       | 470K     | J 1/6W | R318               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R217               | 24366821       | Res.Carbon       | 820      | J 1/6W | R319               | 24366472       | Res.Carbon     | 4. 7K | J 1/6W |
| R218               | 24366362       | Res.Carbon       | 3. 6K    | J 1/6W | R320               | 24366152       | Res.Carbon     | 1. 5K | J 1/6W |
| R219               | 24376752       | Res.Carbon       | 7. 5K    | J 1/2W | R321               | 24366182       | Res.Carbon     | 1. 8K | J 1/6W |
| R220               | 24366273       | Res.Carbon       | 27K      | J 1/6W | R322               | 24366103       | Res.Carbon     | 10K   | J 1/6W |
| R221               | 24366513       | Res.Carbon       | 51K      | J 1/6W | R323               | 24366122       | Res.Carbon     | 1. 2K | J 1/6W |
| R222               | 24366683       | Res.Carbon       | 68K      | J 1/6W | R324               | 24366471       | Res.Carbon     | 470   | J 1/6W |
| R223               | 24366103       | Res.Carbon       | 10K      | J 1/6W | R325               | 24366562       | Res.Carbon     | 5. 6K | J 1/6W |
| R224               | 24366332       | Res.Carbon       | 3. 3K    | J 1/6W | R326               | 24366162       | Res.Carbon     | 1. 6K | J 1/6W |
| R225               | 24366472       | Res.Carbon       | 4. 7K    | J 1/6W | R327               | 24366112       | Res.Carbon     | 1. 1K | J 1/6W |
| R226               | 24366155       | Res.Carbon       | 1. 5M    | J 1/6W | R333               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R227               | 24366152       | Res.Carbon       | 1. 5K    | J 1/6W | R340               | 24366221       | Res.Carbon     | 220   | J 1/6W |
| R228               | 24366152       | Res.Carbon       | 1. 5K    | J 1/6W | R342               | 24366821       | Res.Carbon     | 820   | J 1/6W |
| R229               | 24366821       | Res.Carbon       | 820      | J 1/6W | R343               | 24366105       | Res.Carbon     | 1M    | J 1/6W |
| R230               | 24366474       | Res.Carbon       | 470K     | J 1/6W | R344               | 24366472       | Res.Carbon     | 4. 7K | J 1/6W |
| R231               | 24366124       | Res.Carbon       | 120K     | J 1/6W | R345               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R232               | 24366222       | Res.Carbon       | 2. 2K    | J 1/6W | R346               | 24366102       | Res.Carbon     | 1K    | J 1/6W |
| R235               | 24366223       | Res.Carbon       | 22K      | J 1/6W | R347               | 24366162       | Res.Carbon     | 1. 6K | J 1/6W |
| R236               | 24366223       | Res.Carbon       | 22K      | J 1/6W | R348               | 24366181       | Res.Carbon     | 180   | J 1/6W |
| R237               | 24380132       | Res.Carbon       | 1. 3K    | J 1/8W | R349               | 24366750       | Res.Carbon     | 75    | J 1/6W |
| R238               | 24366821       | Res.Carbon       | 820      | J 1/6W | R351               | 24066956       | Res.Variable   | 500   |        |
| R239               | 24366222       | Res.Carbon       | 2. 2K    | J 1/6W | R362               | 24366332       | Res.Carbon     | 3. 3K | J 1/6W |
| R240               | 24366132       | Res.Carbon       | 1. 3K    | J 1/6W | R401               | 24366750       | Res.Carbon     | 75    | J 1/6W |
| R241               | 24366222       | Res.Carbon       | 2. 2K    | J 1/6W | R402               | 24366272       | Res.Carbon     | 2. 7K | J 1/6W |
| R242               | 24366102       | Res.Carbon       | 1K       | J 1/6W | R403               | 24366470       | Res.Carbon     | 47    | J 1/6W |
| R243               | 24366471       | Res.Carbon       | 470      | J 1/6W | R404               | 24366392       | Res.Carbon     | 3. 9K | J 1/6W |
| R244               | 24366681       | Res.Carbon       | 680      | J 1/6W | R405               | 24366103       | Res.Carbon     | 10K   | J 1/6W |
| R245               | 24366202       | Res.Carbon       | 2K       | J 1/6W | R406               | 24366222       | Res.Carbon     | 2. 2K | J 1/6W |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION      |       |        |
|--------------------|-------------------|------------------|-------|--------|
| R407               | 24366202          | Res. Carbon      | 2K    | J 1/6W |
| R408               | 24366333          | Res. Carbon      | 33K   | J 1/6W |
| R409               | 24366302          | Res. Carbon      | 3K    | J 1/6W |
| R410               | 24366472          | Res. Carbon      | 4. 7K | J 1/6W |
| R411               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| R412               | 24366101          | Res. Carbon      | 100   | J 1/6W |
| R413               | 24366122          | Res. Carbon      | 1. 2K | J 1/6W |
| R414               | 24366470          | Res. Carbon      | 47    | J 1/6W |
| R415               | 24366751          | Res. Carbon      | 750   | J 1/6W |
| R416               | 24366750          | Res. Carbon      | 75    | J 1/6W |
| R417               | 24366750          | Res. Carbon      | 75    | J 1/6W |
| R418               | 24366750          | Res. Carbon      | 75    | J 1/6W |
| R419               | 24366332          | Res. Carbon      | 3. 3K | J 1/6W |
| R420               | 24366332          | Res. Carbon      | 3. 3K | J 1/6W |
| R421               | 24366332          | Res. Carbon      | 3. 3K | J 1/6W |
| R422               | 24366224          | Res. Carbon      | 220K  | J 1/6W |
| R423               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| R424               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| R425               | 24366222          | Res. Carbon      | 2. 2K | J 1/6W |
| R426               | 24366471          | Res. Carbon      | 470   | J 1/6W |
| R427               | 24366472          | Res. Carbon      | 4. 7K | J 1/6W |
| R428               | 24366102          | Res. Carbon      | 1K    | J 1/6W |
| R429               | 24366331          | Res. Carbon      | 330   | J 1/6W |
| R430               | 24366222          | Res. Carbon      | 2. 2K | J 1/6W |
| R431               | 24366132          | Res. Carbon      | 1. 3K | J 1/6W |
| R432               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| R433               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| R434               | 24366102          | Res. Carbon      | 1K    | J 1/6W |
| R435               | 24366102          | Res. Carbon      | 1K    | J 1/6W |
| R436               | 24366102          | Res. Carbon      | 1K    | J 1/6W |
| R437               | 24366102          | Res. Carbon      | 1K    | J 1/6W |
| R438               | 24366561          | Res. Carbon      | 560   | J 1/6W |
| R439               | 24366132          | Res. Carbon      | 1. 3K | J 1/6W |
| R440               | 24366121          | Res. Carbon      | 120   | J 1/6W |
| R441               | 24366181          | Res. Carbon      | 180   | J 1/6W |
| R442               | 24366471          | Res. Carbon      | 470   | J 1/6W |
| R443               | 24366820          | Res. Carbon      | 82    | J 1/6W |
| R445               | 24366333          | Res. Carbon      | 33K   | J 1/6W |
| R451               | 24066955          | Res. Variable    | 1K    |        |
| R454               | 24066955          | Res. Variable    | 1K    |        |
| R455               | 24066948          | Res. Variable    | 200K  |        |
| R462               | 24366224          | Res. Carbon      | 220K  | J 1/6W |
| R463               | 24366224          | Res. Carbon      | 220K  | J 1/6W |
| R466               | 24366221          | Res. Carbon      | 220   | J 1/6W |
| R467               | 24366152          | Res. Carbon      | 1. 5K | J 1/6W |
| R468               | 24366821          | Res. Carbon      | 820   | J 1/6W |
| R469               | 24366152          | Res. Carbon      | 1. 5K | J 1/6W |
| R501               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| R502               | 24366823          | Res. Carbon      | 82K   | J 1/6W |
| R503               | 24366334          | Res. Carbon      | 330K  | J 1/6W |
| R504               | 24366334          | Res. Carbon      | 330K  | J 1/6W |
| R505               | 24366134          | Res. Carbon      | 130K  | J 1/6W |
| R506               | 24366223          | Res. Carbon      | 22K   | J 1/6W |
| R507               | 24366223          | Res. Carbon      | 22K   | J 1/6W |
| R508               | 24366472          | Res. Carbon      | 4. 7K | J 1/6W |
| R509               | 24366472          | Res. Carbon      | 4. 7K | J 1/6W |
| R510               | 24366184          | Res. Carbon      | 180K  | J 1/6W |
| R511               | 24366683          | Res. Carbon      | 68K   | J 1/6W |
| R512               | 24366105          | Res. Carbon      | 1M    | J 1/6W |
| R513               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| R514               | 24366472          | Res. Carbon      | 4. 7K | J 1/6W |
| R515               | 24366473          | Res. Carbon      | 47K   | J 1/6W |
| R516               | 24366473          | Res. Carbon      | 47K   | J 1/6W |
| R517               | 24366272          | Res. Carbon      | 2. 7K | J 1/6W |
| R518               | 24366472          | Res. Carbon      | 4. 7K | J 1/6W |
| R521               | 24941275          | Res. Composition | 2. 7M | J 1/4W |
| R522               | 24366472          | Res. Carbon      | 4. 7K | J 1/6W |
| R523               | 24366472          | Res. Carbon      | 4. 7K | J 1/6W |
| R524               | 24366163          | Res. Carbon      | 16K   | J 1/6W |
| R525               | 24366204          | Res. Carbon      | 200K  | J 1/6W |
| R526               | 24366204          | Res. Carbon      | 200K  | J 1/6W |
| R527               | 24366163          | Res. Carbon      | 16K   | J 1/6W |
| R528               | 24366512          | Res. Carbon      | 5. 1K | J 1/6W |
| R529               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| R532               | 24366104          | Res. Carbon      | 100K  | J 1/6W |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION   |       |        |
|--------------------|-------------------|---------------|-------|--------|
| R533               | 24366912          | Res. Carbon   | 9. 1K | J 1/6W |
| R534               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R535               | 24366820          | Res. Carbon   | 82    | J 1/6W |
| R536               | 24366752          | Res. Carbon   | 7. 5K | J 1/6W |
| R537               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R538               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R539               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R540               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R541               | 24366473          | Res. Carbon   | 47K   | J 1/6W |
| R542               | 24366512          | Res. Carbon   | 5. 1K | J 1/6W |
| R544               | 24366512          | Res. Carbon   | 5. 1K | J 1/6W |
| R545               | 24366512          | Res. Carbon   | 5. 1K | J 1/6W |
| R547               | 24366364          | Res. Carbon   | 360K  | J 1/6W |
| R548               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R549               | 24366621          | Res. Carbon   | 620   | J 1/6W |
| R551               | 24066896          | Res. Variable | 500K  |        |
| R552               | 24066896          | Res. Variable | 500K  |        |
| R553               | 24061664          | Res. Variable | 200K  |        |
| R555               | 24066948          | Res. Variable | 200K  |        |
| R557               | 24066946          | Res. Variable | 1M    |        |
| R558               | 24066947          | Res. Variable | 500K  |        |
| R559               | 24066914          | Res. Variable | 5K    |        |
| R560               | 24366222          | Res. Carbon   | 2. 2K | J 1/6W |
| R561               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R562               | 24366221          | Res. Carbon   | 220   | J 1/6W |
| R563               | 24366333          | Res. Carbon   | 33K   | J 1/6W |
| R564               | 24366752          | Res. Carbon   | 7. 5K | J 1/6W |
| R565               | 24366363          | Res. Carbon   | 36K   | J 1/6W |
| R566               | 24366274          | Res. Carbon   | 270K  | J 1/6W |
| R567               | 24366123          | Res. Carbon   | 12K   | J 1/6W |
| R568               | 24366203          | Res. Carbon   | 20K   | J 1/6W |
| R569               | 24366123          | Res. Carbon   | 12K   | J 1/6W |
| R570               | 24366113          | Res. Carbon   | 11K   | J 1/6W |
| R571               | 24366221          | Res. Carbon   | 220   | J 1/6W |
| R572               | 24366224          | Res. Carbon   | 220K  | J 1/6W |
| R573               | 24366222          | Res. Carbon   | 2. 2K | J 1/6W |
| R574               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R575               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R576               | 24366364          | Res. Carbon   | 360K  | J 1/6W |
| R577               | 24366132          | Res. Carbon   | 1. 3K | J 1/6W |
| R578               | 24366133          | Res. Carbon   | 13K   | J 1/6W |
| R579               | 24366153          | Res. Carbon   | 15K   | J 1/6W |
| R581               | 24366202          | Res. Carbon   | 2K    | J 1/6W |
| R582               | 24366102          | Res. Carbon   | 1K    | J 1/6W |
| R583               | 24366221          | Res. Carbon   | 220   | J 1/6W |
| R584               | 24366105          | Res. Carbon   | 1M    | J 1/6W |
| R585               | 24366473          | Res. Carbon   | 47K   | J 1/6W |
| R586               | 24366153          | Res. Carbon   | 15K   | J 1/6W |
| R587               | 24366153          | Res. Carbon   | 15K   | J 1/6W |
| R588               | 24366334          | Res. Carbon   | 330K  | J 1/6W |
| R589               | 24366162          | Res. Carbon   | 1. 6K | J 1/6W |
| R590               | 24366272          | Res. Carbon   | 2. 7K | J 1/6W |
| R591               | 24366204          | Res. Carbon   | 200K  | J 1/6W |
| R593               | 24366562          | Res. Carbon   | 5. 6K | J 1/6W |
| R594               | 24366332          | Res. Carbon   | 3. 3K | J 1/6W |
| R595               | 24366473          | Res. Carbon   | 47K   | J 1/6W |
| R596               | 24366104          | Res. Carbon   | 100K  | J 1/6W |
| R597               | 24366473          | Res. Carbon   | 47K   | J 1/6W |
| R598               | 24366392          | Res. Carbon   | 3. 9K | J 1/6W |
| R599               | 24366473          | Res. Carbon   | 47K   | J 1/6W |
| R607               | 24366101          | Res. Carbon   | 100   | J 1/6W |
| R609               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R610               | 24366332          | Res. Carbon   | 3. 3K | J 1/6W |
| R611               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R612               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R613               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R614               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R615               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R616               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R617               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R618               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R619               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R620               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R621               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R622               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |



| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION   |       |        |  |
|--------------------|-------------------|---------------|-------|--------|--|
| R623               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R624               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R625               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R626               | 24366124          | Res. Carbon   | 120K  | J 1/6W |  |
| R627               | 24366124          | Res. Carbon   | 120K  | J 1/6W |  |
| R628               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| R629               | 24366822          | Res. Carbon   | 8. 2K | J 1/6W |  |
| R630               | 24366151          | Res. Carbon   | 150   | J 1/6W |  |
| R631               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R632               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| R633               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R634               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R635               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R636               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R637               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R638               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R639               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| R640               | 24366182          | Res. Carbon   | 1. 8K | J 1/6W |  |
| R641               | 24366101          | Res. Carbon   | 100   | J 1/6W |  |
| R642               | 24366561          | Res. Carbon   | 560   | J 1/6W |  |
| R643               | 24982399          | Res. Metal    | 3. 9  | J 1/2W |  |
| R645               | 24367272          | Res. Carbon   | 2.7K  | G 1/8W |  |
| R646               | 24367302          | Res. Carbon   | 3K    | G 1/6W |  |
| R647               | 24367331          | Res. Carbon   | 330   | G 1/6W |  |
| R648               | 24367162          | Res. Carbon   | 1. 6K | G 1/6W |  |
| R649               | 24366152          | Res. Carbon   | 1. 5K | J 1/6W |  |
| R651               | 24066952          | Res. Variable |       |        |  |
| R652               | 24066954          | Res. Variable | 2K    |        |  |
| R653               | 24066952          | Res. Variable | 10K   |        |  |
| R660               | 24366473          | Res. Carbon   | 47K   | J 1/6W |  |
| R661               | 24366392          | Res. Carbon   | 3. 9K | J 1/6W |  |
| R663               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R664               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R665               | 24366334          | Res. Carbon   | 330K  | J 1/6W |  |
| R666               | 24366334          | Res. Carbon   | 330K  | J 1/6W |  |
| R667               | 24366332          | Res. Carbon   | 3. 3K | J 1/6W |  |
| R668               | 24366432          | Res. Carbon   | 4. 3K | J 1/6W |  |
| R669               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R670               | 24366561          | Res. Carbon   | 560   | J 1/6W |  |
| R671               | 24366561          | Res. Carbon   | 560   | J 1/6W |  |
| R673               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R675               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R676               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R679               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R680               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R681               | 24366152          | Res. Carbon   | 1. 5K | J 1/6W |  |
| R682               | 24366681          | Res. Carbon   | 680   | J 1/6W |  |
| R683               | 24366151          | Res. Carbon   | 150   | J 1/6W |  |
| R684               | 24366682          | Res. Carbon   | 6. 8K | J 1/6W |  |
| R685               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R686               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| R687               | 24366101          | Res. Carbon   | 100   | J 1/6W |  |
| R688               | 24366101          | Res. Carbon   | 100   | J 1/6W |  |
| R689               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R691               | 24366201          | Res. Carbon   | 200   | J 1/6W |  |
| R692               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| R695               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| R696               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R697               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R698               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| R699               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| RD99               | 24366753          | Res. Carbon   | 75K   | J 1/6W |  |
| RL69               | 24366221          | Res. Carbon   | 220   | J 1/6W |  |
| RL89               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RL91               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| RL92               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| RL94               | 24366512          | Res. Carbon   | 5. 1K | J 1/6W |  |
| RL95               | 24366101          | Res. Carbon   | 100   | J 1/6W |  |
| RL96               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| RL97               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| RL98               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RL99               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RY01               | 24366133          | Res. Carbon   | 13K   | J 1/6W |  |
| RY02               | 24366624          | Res. Carbon   | 620K  | J 1/6W |  |
| RY03               | 24366222          | Res. Carbon   | 2. 2K | J 1/6W |  |

| LOCATION<br>NUMBER        | P A R T<br>NUMBER | DESCRIPTION                      |           |        |  |
|---------------------------|-------------------|----------------------------------|-----------|--------|--|
| RY04                      | 24366472          | Res. Carbon                      | 4. 7K     | J 1/6W |  |
| RY05                      | 24366472          | Res. Carbon                      | 4. 7K     | J 1/6W |  |
| RY06                      | 24366472          | Res. Carbon                      | 4. 7K     | J 1/6W |  |
| RY07                      | 24366244          | Res. Carbon                      | 240K      | J 1/6W |  |
| RY08                      | 24366563          | Res. Carbon                      | 56K       | J 1/6W |  |
| RY09                      | 24366682          | Res. Carbon                      | 6. 8K     | J 1/6W |  |
| RY14                      | 24366223          | Res. Carbon                      | 22K       | J 1/6W |  |
| RY15                      | 24366105          | Res. Carbon                      | 1M        | J 1/6W |  |
| RY17                      | 24366474          | Res. Carbon                      | 470K      | J 1/6W |  |
| RY18                      | 24366224          | Res. Carbon                      | 220K      | J 1/6W |  |
| RY19                      | 24366224          | Res. Carbon                      | 220K      | J 1/6W |  |
| RY20                      | 24366394          | Res. Carbon                      | 390K      | J 1/6W |  |
| RY21                      | 24366473          | Res. Carbon                      | 47K       | J 1/6W |  |
| RY31                      | 24366101          | Res. Carbon                      | 100       | J 1/6W |  |
| RY33                      | 24366393          | Res. Carbon                      | 39K       | J 1/6W |  |
| RY34                      | 24366103          | Res. Carbon                      | 10K       | J 1/6W |  |
| RY35                      | 24366223          | Res. Carbon                      | 22K       | J 1/6W |  |
| RY36                      | 24366104          | Res. Carbon                      | 100K      | J 1/6W |  |
| RY38                      | 24366914          | Res. Carbon                      | 910K      | J 1/6W |  |
| RY98                      | 24366103          | Res. Carbon                      | 10K       | J 1/6W |  |
| RY99                      | 24366473          | Res. Carbon                      | 47K       | J 1/6W |  |
| M I S C E L L A N E O U S |                   |                                  |           |        |  |
| H002                      | 70123096          | RF Modulator, MSU112             |           |        |  |
| P209                      | 23365208          | Phono Jack                       |           |        |  |
| Q516B                     | 70391355          | Screw, 3x8mm                     |           |        |  |
| Q517A                     | 23721308          | Screw, 3x8mm                     |           |        |  |
| Q625B                     | 70391355          | Screw, 3x8mm                     |           |        |  |
| S101                      | 23145395          | Slide Switch, 1C3P               |           |        |  |
| S202                      | 23145396          | Slide Switch, 1C3P               |           |        |  |
| V502                      | 70391334          | Screw, 3x8mm                     |           |        |  |
| X401                      | 70138078          | 1H Delay                         |           |        |  |
| X402                      | 70153037          | Crystal, 3. 58MHz                |           |        |  |
| X601                      | 23153847          | Resonator, 4MHz, TCR1014         |           |        |  |
| Z201                      | 23107731          | Filter, TLC1090                  |           |        |  |
| Z401                      | 23107807          | Filter, TLC1062, 3. 58MHz        |           |        |  |
| Z601                      | 24000916          | Resistor Block, 4. 7K x4         |           |        |  |
| Z801                      | 23107728          | DC-DC Converter                  |           |        |  |
| UM02                      | 70197159          | P C Board Assy, F/I, L           |           |        |  |
| C A P A C I T O R S       |                   |                                  |           |        |  |
| CM21                      | 24232103          | Cap. Ceramic                     | 0. 01MF   | Z 50V  |  |
| UM03                      | 70197158          | P C Board Assy, F/I, R           |           |        |  |
| CM31                      | 24232103          | Cap. Ceramic                     | 0. 01MF   | Z 50V  |  |
| UM04                      | 70194602          | P C Board Assy, Reel. Sensor (S) |           |        |  |
| UM05                      | 70194603          | P C Board Assy, Reel. Sensor (T) |           |        |  |
| UM07                      | 70197151          | P C Board Assy, ACE Head         |           |        |  |
| R E S I S T O R S         |                   |                                  |           |        |  |
| RM71                      | 24366100          | Res. Carbon                      | 10        | J 1/6W |  |
| UM08                      | 70194606          | P C Board Assy, Loading Motor    |           |        |  |
| U301                      | 70197319          | P C Board Assy, Sub Video        |           |        |  |
| T R A N S I S T O R S     |                   |                                  |           |        |  |
| Q370                      | A6332540          | Transistor                       | 2SC2668-Y |        |  |
| Q371                      | A6332430          | Transistor                       | 2SC2458-Y |        |  |
| Q374                      | A6534430          | Transistor                       | 2SA1048-Y |        |  |
| Q375                      | A6534430          | Transistor                       | 2SA1048-Y |        |  |
| D I O D E S               |                   |                                  |           |        |  |
| D370                      | A7151500          | Diode                            | 1SS201    |        |  |
| C A P A C I T O R S       |                   |                                  |           |        |  |
| C370                      | 24436181          | Cap. Ceramic                     | 180PF     | J 50V  |  |
| C372                      | 24206010          | Cap. Electrolytic                | 1MF       | M 50V  |  |
| C373                      | 24206010          | Cap. Electrolytic                | 1MF       | M 50V  |  |
| C374                      | 24474103          | Cap. Ceramic                     | 0. 01MF   | N 50V  |  |
| C376                      | 24473680          | Cap. Ceramic                     | 68PF      | J 50V  |  |
| C377                      | 24201470          | Cap. Electrolytic                | 47MF      | M 6.3V |  |
| R E S I S T O R S         |                   |                                  |           |        |  |
| R370                      | 24366391          | Res. Carbon                      | 390       | J 1/6W |  |
| R371                      | 24366332          | Res. Carbon                      | 3. 3K     | J 1/6W |  |
| R372                      | 24366222          | Res. Carbon                      | 2. 2K     | J 1/6W |  |

| LOCATION<br>NUMBER  | P A R T<br>NUMBER | DESCRIPTION            |            |        |  |
|---------------------|-------------------|------------------------|------------|--------|--|
| R373                | 24366102          | Res.Carbon             | 1K         | J 1/8W |  |
| R374                | 24366472          | Res.Carbon             | 4. 7K      | J 1/8W |  |
| R375                | 24366242          | Res.Carbon             | 2. 4K      | J 1/8W |  |
| R377                | 24366102          | Res.Carbon             | 1K         | J 1/8W |  |
| R378                | 24366102          | Res.Carbon             | 1K         | J 1/8W |  |
| R379                | 24366103          | Res.Carbon             | 10K        | J 1/8W |  |
| R381                | 24366361          | Res.Carbon             | 360        | J 1/8W |  |
| R382                | 24366432          | Res.Carbon             | 4. 3K      | J 1/8W |  |
| R383                | 24366152          | Res.Carbon             | 1. 5K      | J 1/8W |  |
| R384                | 24366222          | Res.Carbon             | 2. 2K      | J 1/8W |  |
| R385                | 24366103          | Res.Carbon             | 10K        | J 1/8W |  |
| R386                | 24366103          | Res.Carbon             | 10K        | J 1/8W |  |
| R387                | 24366222          | Res.Carbon             | 2. 2K      | J 1/8W |  |
| MISCELLANEOUS       |                   |                        |            |        |  |
| P402                | 23367026          | Plug.3P                |            |        |  |
|                     |                   |                        |            |        |  |
| U802                | 70197358          | P C Board Assy.Power 1 |            |        |  |
| TRANSISTORS         |                   |                        |            |        |  |
| Q808                | 70114344          | Transistor             | 2SD1198A-Q |        |  |
| DIODES              |                   |                        |            |        |  |
| ΔD801               | 23118977          | Diode                  | ERC01-02FL |        |  |
| ΔD802               | 23118977          | Diode                  | ERC01-02FL |        |  |
| ΔD803               | 23118977          | Diode                  | ERC01-02FL |        |  |
| ΔD804               | 23118977          | Diode                  | ERC01-02FL |        |  |
| D806                | A7682052          | Diode                  | 1B2Z1      |        |  |
| CAPACITORS          |                   |                        |            |        |  |
| ΔC801               | 24092009          | Cap.Ceramic            | 100PF      | Z 125V |  |
| C802                | 24538223          | Cap.Plastic            | 0. 022MF   | J 50V  |  |
| C803                | 24538223          | Cap.Plastic            | 0. 022MF   | J 50V  |  |
| ΔC804               | 24086973          | Cap.Electrolytic       | 6800MF     | M 35V  |  |
| ΔC805               | 24794332          | Cap.Electrolytic       | 3300MF     | M 16V  |  |
| C806                | 24794101          | Cap.Electrolytic       | 100MF      | M 16V  |  |
| C808                | 24795102          | Cap.Electrolytic       | 1000MF     | M 25V  |  |
| C809                | 24538224          | Cap.Plastic            | 0. 22MF    | J 50V  |  |
| RESISTORS           |                   |                        |            |        |  |
| ΔR801               | 24942335          | Res.Composition        | 3. 3M      | J 1/2W |  |
| R802                | 24552511          | Res.Oxide Metal        | 510        | J 1/2W |  |
| R803                | 24366201          | Res.Carbon             | 200        | J 1/8W |  |
| R804                | 24366104          | Res.Carbon             | 100K       | J 1/8W |  |
| R805                | 24366103          | Res.Carbon             | 10K        | J 1/8W |  |
| ΔR806               | 24556159          | Res.Fusible            | 1. 5       | K 1/2W |  |
| MISCELLANEOUS       |                   |                        |            |        |  |
| ΔF801               | 23144929          | Fuse.1. 2A             |            |        |  |
| ΔF801A              | 23165081          | Fuse Holder            |            |        |  |
| ΔF802               | 23144897          | Fuse.125V. 2. 0A       |            |        |  |
| ΔF802A              | 23165102          | Fuse Holder            |            |        |  |
| ΔF803               | 23144911          | Fuse.1. 2A             |            |        |  |
| ΔF803A              | 23165102          | Fuse Holder            |            |        |  |
|                     |                   |                        |            |        |  |
| U803                | 70197359          | P C Board Assy.Power 2 |            |        |  |
| INTEGRATED CIRCUITS |                   |                        |            |        |  |
| IC801               | 70135077          | IC                     | STK7241    |        |  |
| IC802               | 70119512          | IC                     | LA6324     |        |  |
| IC805               | 23314140          | IC                     | STA342M    |        |  |
| TRANSISTORS         |                   |                        |            |        |  |
| Q806                | A6332430          | Transistor             | 2SC2458-Y  |        |  |
| Q807                | A6002010          | Transistor             | RN1201     |        |  |
| Q809                | A6533240          | Transistor             | 2SA966-Y   |        |  |
| Q810                | A6533240          | Transistor             | 2SA966-Y   |        |  |
| Q811                | A6867970          | Transistor             | 2SD1405-BL |        |  |
| Q812                | A6332430          | Transistor             | 2SC2458-Y  |        |  |
| Q813                | A6002010          | Transistor             | RN1201     |        |  |
| DIODES              |                   |                        |            |        |  |
| D805                | 70115408          | Diode                  | EQAQ02-05D |        |  |
| D807                | A7246711          | Diode                  | 1S1555(TV) |        |  |
| D811                | A7151450          | Diode                  | 1SS200     |        |  |
| COILS               |                   |                        |            |        |  |
| L801                | 23103961          | Coil.Choke             | 2BF253D-01 |        |  |
| L802                | 23221948          | Coil.Choke             | TLN3030    |        |  |
| L803                | 23103961          | Coil.Choke             | 2BF253D-01 |        |  |
| L804                | 23103961          | Coil.Choke             | 2BF253D-01 |        |  |
| CAPACITORS          |                   |                        |            |        |  |
| C810                | 24203220          | Cap.Electrolytic       | 22MF       | M 16V  |  |
| C811                | 24206010          | Cap.Electrolytic       | 1MF        | M 50V  |  |
| C812                | 24794221          | Cap.Electrolytic       | 220MF      | M 16V  |  |

| LOCATION<br>NUMBER  | P A R T<br>NUMBER | DESCRIPTION                    |            |        |  |
|---------------------|-------------------|--------------------------------|------------|--------|--|
| C813                | 24794102          | Cap.Electrolytic               | 1000MF     | M 16V  |  |
| C814                | 24232103          | Cap.Ceramic                    | 0. 01MF    | Z 50V  |  |
| C815                | 24203220          | Cap.Electrolytic               | 22MF       | M 16V  |  |
| C816                | 24203220          | Cap.Electrolytic               | 22MF       | M 16V  |  |
| C817                | 24203220          | Cap.Electrolytic               | 22MF       | M 16V  |  |
| C818                | 24203220          | Cap.Electrolytic               | 22MF       | M 16V  |  |
| RESISTORS           |                   |                                |            |        |  |
| R807                | 24380822          | Res.Carbon                     | 8. 2K      | J 1/8W |  |
| R810                | 24367242          | Res.Carbon                     | 2. 4K      | G 1/8W |  |
| R811                | 24367302          | Res.Carbon                     | 3K         | G 1/8W |  |
| R812                | 24366102          | Res.Carbon                     | 1K         | J 1/8W |  |
| R813                | 24366202          | Res.Carbon                     | 2K         | J 1/8W |  |
| R815                | 24366270          | Res.Carbon                     | 27         | J 1/8W |  |
| R816                | 24366301          | Res.Carbon                     | 300        | J 1/8W |  |
| R817                | 24366301          | Res.Carbon                     | 300        | J 1/8W |  |
| R818                | 24366103          | Res.Carbon                     | 10K        | J 1/8W |  |
| R820                | 24552391          | Res.Oxide Metal                | 390        | J 1/2W |  |
| R821                | 24366102          | Res.Carbon                     | 1K         | J 1/8W |  |
| R822                | 24366431          | Res.Carbon                     | 430        | J 1/8W |  |
| R823                | 24366301          | Res.Carbon                     | 300        | J 1/8W |  |
| R824                | 24366102          | Res.Carbon                     | 1K         | J 1/8W |  |
| R825                | 24360362          | Res.Carbon                     | 3. 6K      | J 1/8W |  |
| R826                | 24366301          | Res.Carbon                     | 300        | J 1/8W |  |
| R827                | 24366101          | Res.Carbon                     | 100        | J 1/8W |  |
|                     |                   |                                |            |        |  |
| U804                | 70197360          | P C Board Assy.Power Tr        |            |        |  |
| TRANSISTORS         |                   |                                |            |        |  |
| Q803                | A6867970          | Transistor                     | 2SD1405-BL |        |  |
| Q804                | A6867970          | Transistor                     | 2SD1405-BL |        |  |
| RESISTORS           |                   |                                |            |        |  |
| R841                | 24366301          | Res.Carbon                     | 300        | J 1/8W |  |
| R842                | 24366301          | Res.Carbon                     | 300        | J 1/8W |  |
|                     |                   |                                |            |        |  |
| U902                | 70197361          | P C Board Assy.Audio Sub Logic |            |        |  |
| INTEGRATED CIRCUITS |                   |                                |            |        |  |
| IC605               | B0402325          | IC                             | 42C70N8116 |        |  |
| IC701               | 70119518          | IC                             | LA7090     |        |  |
| IC702               | B0325536          | IC                             | TA7361AP   |        |  |
| IC703               | 70119529          | IC                             | BA7750AL   |        |  |
| IC901               | B0379260          | IC                             | TA8626N    |        |  |
| IC902               | B0379270          | IC                             | TA8627N    |        |  |
| IC903               | 70119621          | IC                             | NJM2068S   |        |  |
| IC904               | 23119262          | IC                             | M5216L     |        |  |
| IC905               | B0379250          | IC                             | TA8625N    |        |  |
| IC906               | B0358220          | IC                             | TA7772P    |        |  |
| ICF01               | 70119686          | IC                             | M5201L     |        |  |
| ICF02               | 70119686          | IC                             | M5201L     |        |  |
| ICF03               | B0470522          | IC                             | TC4052BP   |        |  |
| ICF04               | B0379640          | IC                             | TA79L009P  |        |  |
| ICF05               | 70119686          | IC                             | M5201L     |        |  |
| ICF06               | 70119686          | IC                             | M5201L     |        |  |
| TRANSISTORS         |                   |                                |            |        |  |
| Q611                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q612                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q638                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q697                | A6002040          | Transistor                     | RN1204     |        |  |
| Q698                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q699                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q704                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q705                | A6319300          | Transistor                     | 2SC1959-Y  |        |  |
| Q706                | A6319300          | Transistor                     | 2SC1959-Y  |        |  |
| Q707                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q708                | A6319300          | Transistor                     | 2SC1959-Y  |        |  |
| Q709                | A6002040          | Transistor                     | RN1204     |        |  |
| Q710                | A6325540          | Transistor                     | SC2236-Y   |        |  |
| Q711                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q712                | A6002040          | Transistor                     | RN1204     |        |  |
| Q713                | A6002030          | Transistor                     | RN1203     |        |  |
| Q908                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q910                | A6002040          | Transistor                     | RN1204     |        |  |
| Q911                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q912                | A6012020          | Transistor                     | RN2202     |        |  |
| Q913                | A6012020          | Transistor                     | RN2202     |        |  |
| Q914                | A6332430          | Transistor                     | 2SC2458-Y  |        |  |
| Q915                | A6002040          | Transistor                     | RN1204     |        |  |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |
|--------------------|----------------|-------------|
|--------------------|----------------|-------------|

|      |          |                      |
|------|----------|----------------------|
| Q916 | A6332430 | Transistor 2SC2458-Y |
| Q922 | A6534430 | Transistor 2SA1048-Y |
| Q923 | A6332430 | Transistor 2SC2458-Y |
| Q924 | A6534430 | Transistor 2SA1048-Y |
| Q925 | A6002020 | Transistor RN1202    |
| Q926 | A6325540 | Transistor SC2238-Y  |
| Q927 | A6002020 | Transistor RN1202    |
| Q928 | A6534125 | Transistor 2SA1020-Y |
| Q929 | A6332430 | Transistor 2SC2458-Y |
| Q930 | A6534430 | Transistor 2SA1048-Y |
| Q931 | A6332430 | Transistor 2SC2458-Y |
| Q932 | A6002040 | Transistor RN1204    |
| Q933 | A6002030 | Transistor RN1203    |
| Q934 | A6002030 | Transistor RN1203    |
| Q935 | A6002030 | Transistor RN1203    |
| Q936 | A6002040 | Transistor RN1204    |
| Q937 | A6002040 | Transistor RN1204    |
| QF11 | A6002040 | Transistor RN1204    |
| QF12 | A6002040 | Transistor RN1204    |
| QF13 | A6002040 | Transistor RN1204    |
| QF14 | A6002040 | Transistor RN1204    |
| QF15 | A6002040 | Transistor RN1204    |
| QF16 | A6002040 | Transistor RN1204    |
| QF17 | A6002040 | Transistor RN1204    |
| QF19 | A6342200 | Transistor 2SC2878A  |
| QF20 | A6342200 | Transistor 2SC2878A  |
| QF21 | A6012020 | Transistor RN2202    |
| QF22 | A6002040 | Transistor RN1204    |
| QF23 | A6002040 | Transistor RN1204    |
| QF24 | A6332430 | Transistor 2SC2458-Y |
| QK01 | A6002030 | Transistor RN1203    |
| QK02 | A6002030 | Transistor RN1203    |
| QK03 | A6342200 | Transistor 2SC2878A  |
| QK05 | A6332430 | Transistor 2SC2458-Y |
| QK06 | A6534430 | Transistor 2SA1048-Y |
| QK07 | A6002040 | Transistor RN1204    |
| QK08 | A6534430 | Transistor 2SA1048-Y |
| QK09 | A6012040 | Transistor RN2204    |
| QM01 | A6002030 | Transistor RN1203    |
| QM02 | A6002030 | Transistor RN1203    |
| QM03 | A6342200 | Transistor 2SC2878A  |
| QM05 | A6332430 | Transistor 2SC2458-Y |
| QM06 | A6534430 | Transistor 2SA1048-Y |
| QM07 | A6002040 | Transistor RN1204    |
| QM08 | A6534430 | Transistor 2SA1048-Y |
| QM09 | A6012040 | Transistor RN2204    |
| QX98 | A6332430 | Transistor 2SC2458-Y |
| QX99 | A6332430 | Transistor 2SC2458-Y |

#### DIODES

|      |          |                        |
|------|----------|------------------------|
| D599 | A7160570 | Diode 1SS176           |
| D601 | A7109395 | Diode,Zener 05Z 3. 9-Y |
| D620 | A7151500 | Diode 1SS201           |
| D701 | A7160570 | Diode 1SS176           |
| D702 | A7160570 | Diode 1SS176           |
| D703 | A7160570 | Diode 1SS176           |
| D704 | A7160570 | Diode 1SS176           |
| D705 | A7160570 | Diode 1SS176           |
| D901 | A7160570 | Diode 1SS176           |
| D902 | A7160570 | Diode 1SS176           |
| D903 | A7160570 | Diode 1SS176           |
| D904 | A7160570 | Diode 1SS176           |
| D905 | A7160570 | Diode 1SS176           |
| D907 | A7160570 | Diode 1SS176           |
| D908 | A7160570 | Diode 1SS176           |
| D910 | A7160570 | Diode 1SS176           |
| D911 | A7151500 | Diode 1SS201           |
| D915 | A7110017 | Diode,Zener 05Z 5. 6-Y |
| DF01 | A7160570 | Diode 1SS176           |
| DF03 | A7160570 | Diode 1SS176           |
| DF04 | A7160570 | Diode 1SS176           |
| DK01 | A7160570 | Diode 1SS176           |
| DM01 | A7160570 | Diode 1SS176           |
| DX98 | A7160570 | Diode 1SS176           |
| DX99 | A7109395 | Diode,Zener 05Z 3. 9-Y |

#### COILS

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |
|--------------------|----------------|-------------|
|--------------------|----------------|-------------|

|      |          |                        |
|------|----------|------------------------|
| L701 | 23238721 | Coil,Peaking TRF4103A1 |
| L702 | 23221937 | Coil,Choke TLN3040     |
| L703 | 23238721 | Coil,Peaking TRF4103A1 |
| L704 | 23238886 | Coil,Peaking TRF4822AE |
| L901 | 23237969 | Coil,Peaking TRF4331AC |
| L902 | 23239835 | Coil,Peaking TRF4109AJ |
| L903 | 23239835 | Coil,Peaking TRF4109AJ |
| L904 | 23238732 | Coil,Peaking TRF4560AH |
| L905 | 23238917 | Coil,Peaking TRF4270AC |

#### CAPACITORS

|      |          |                                |
|------|----------|--------------------------------|
| C603 | 24206478 | Cap.Electrolytic 0. 47MF M 50V |
| C619 | 24232223 | Cap.Ceramic 0. 022MF Z 50V     |
| C620 | 24201470 | Cap.Electrolytic 47MF M 6.3V   |
| C630 | 24232103 | Cap.Ceramic 0. 01MF Z 50V      |
| C631 | 24436330 | Cap.Ceramic 33PF J 50V         |
| C632 | 24436330 | Cap.Ceramic 33PF J 50V         |
| C633 | 24232103 | Cap.Ceramic 0. 01MF Z 50V      |
| C634 | 24538394 | Cap.Plastic 0. 39MF J 50V      |
| C701 | 24206479 | Cap.Electrolytic 4. 7MF M 50V  |
| C702 | 24212681 | Cap.Ceramic 680PF K 50V        |
| C703 | 24212272 | Cap.Ceramic 2700PF K 50V       |
| C704 | 24591472 | Cap.Plastic 4700PF J 50V       |
| C705 | 24538103 | Cap.Plastic 0. 01MF J 50V      |
| C706 | 24206479 | Cap.Electrolytic 4. 7MF M 50V  |
| C707 | 24203470 | Cap.Electrolytic 47MF M 16V    |
| C708 | 24203100 | Cap.Electrolytic 10MF M 16V    |
| C709 | 24203470 | Cap.Electrolytic 47MF M 16V    |
| C711 | 24201470 | Cap.Electrolytic 47MF M 6.3V   |
| C712 | 24206479 | Cap.Electrolytic 4. 7MF M 50V  |
| C713 | 24538123 | Cap.Plastic 0. 012MF J 50V     |
| C714 | 24591563 | Cap.Plastic 0. 053MF J 50V     |
| C715 | 24206479 | Cap.Electrolytic 4. 7MF M 50V  |
| C716 | 24203470 | Cap.Electrolytic 47MF M 16V    |
| C717 | 24203470 | Cap.Electrolytic 47MF M 16V    |
| C718 | 24203470 | Cap.Electrolytic 47MF M 16V    |
| C719 | 24203470 | Cap.Electrolytic 47MF M 16V    |
| C720 | 24212472 | Cap.Ceramic 4700PF K 50V       |
| C721 | 24212682 | Cap.Ceramic 6800PF K 50V       |
| C722 | 24538563 | Cap.Plastic 0. 056MF J 50V     |
| C723 | 24214221 | Cap.Ceramic 220PF K 500V       |
| C724 | 24538124 | Cap.Plastic 0. 12MF J 50V      |
| C725 | 24538153 | Cap.Plastic 0. 015MF J 50V     |
| C726 | 24538223 | Cap.Plastic 0. 022MF J 50V     |
| C727 | 24538153 | Cap.Plastic 0. 015MF J 50V     |
| C728 | 24538683 | Cap.Plastic 0. 068MF J 50V     |
| C729 | 24202101 | Cap.Electrolytic 100MF M 10V   |
| C731 | 24206229 | Cap.Electrolytic 2. 2MF M 50V  |
| C732 | 24206010 | Cap.Electrolytic 1MF M 50V     |
| C733 | 24203101 | Cap.Electrolytic 100MF M 16V   |
| C734 | 24203470 | Cap.Electrolytic 47MF M 16V    |
| C735 | 24206478 | Cap.Electrolytic 0. 47MF M 50V |
| C736 | 24206478 | Cap.Electrolytic 0. 47MF M 50V |
| C737 | 24206010 | Cap.Electrolytic 1MF M 50V     |
| C738 | 24085002 | Cap.Electrolytic 2. 2MF M 16V  |
| C739 | 24538154 | Cap.Plastic 0. 15MF J 50V      |
| C740 | 24538273 | Cap.Plastic 0. 027MF J 50V     |
| C741 | 24206478 | Cap.Electrolytic 0. 47MF M 50V |
| C742 | 24232103 | Cap.Ceramic 0. 01MF Z 50V      |
| C743 | 24206010 | Cap.Electrolytic 1MF M 50V     |
| C744 | 24202101 | Cap.Electrolytic 100MF M 10V   |
| C902 | 24203100 | Cap.Electrolytic 10MF M 16V    |
| C904 | 24630914 | Cap.Electrolytic 330MF M 10V   |
| C905 | 24436390 | Cap.Ceramic 39PF J 50V         |
| C906 | 24203100 | Cap.Electrolytic 10MF M 16V    |
| C907 | 24203100 | Cap.Electrolytic 10MF M 16V    |
| C908 | 24203100 | Cap.Electrolytic 10MF M 16V    |
| C909 | 24630917 | Cap.Electrolytic 100MF M 25V   |
| C910 | 24474103 | Cap.Ceramic 0. 01MF N 50V      |
| C911 | 24630914 | Cap.Electrolytic 330MF M 10V   |
| C913 | 24201470 | Cap.Electrolytic 47MF M 6.3V   |
| C914 | 24202330 | Cap.Electrolytic 33MF M 10V    |
| C915 | 24212222 | Cap.Ceramic 2200PF K 50V       |
| C917 | 24630914 | Cap.Electrolytic 330MF M 10V   |
| C918 | 24474103 | Cap.Ceramic 0. 01MF N 50V      |
| C919 | 24630917 | Cap.Electrolytic 100MF M 25V   |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION      |          |        |
|--------------------|-------------------|------------------|----------|--------|
| C920               | 24630918          | Cap.Electrolytic | 47MF     | M 25V  |
| C921               | 24793471          | Cap.Electrolytic | 470MF    | M 10V  |
| C922               | 24206229          | Cap.Electrolytic | 2. 2MF   | M 50V  |
| C923               | 24794221          | Cap.Electrolytic | 220MF    | M 16V  |
| C924               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| C925               | 24201470          | Cap.Electrolytic | 47MF     | M 6.3V |
| C927               | 24538683          | Cap.Plastic      | 0. 068MF | J 50V  |
| C928               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C929               | 24436271          | Cap.Ceramic      | 270PF    | J 50V  |
| C930               | 24436150          | Cap.Ceramic      | 15PF     | J 50V  |
| C931               | 24436150          | Cap.Ceramic      | 15PF     | J 50V  |
| C932               | 24538274          | Cap.Plastic      | 0. 27MF  | J 50V  |
| C933               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C934               | 24232223          | Cap.Ceramic      | 0. 022MF | Z 50V  |
| C935               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C936               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| C937               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C938               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C939               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C940               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C941               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C942               | 24201220          | Cap.Electrolytic | 22MF     | M 6.3V |
| C943               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C944               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| C945               | 24436241          | Cap.Ceramic      | 240PF    | J 50V  |
| C946               | 24436241          | Cap.Ceramic      | 240PF    | J 50V  |
| C947               | 24212471          | Cap.Ceramic      | 470PF    | K 50V  |
| C948               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| C960               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| C961               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| C963               | 24203100          | Cap.Electrolytic | 10MF     | M 16V  |
| C964               | 24206010          | Cap.Electrolytic | 1MF      | M 50V  |
| C965               | 24201220          | Cap.Electrolytic | 22MF     | M 6.3V |
| C967               | 24206229          | Cap.Electrolytic | 2. 2MF   | M 50V  |
| C968               | 24206339          | Cap.Electrolytic | 3. 3MF   | M 50V  |
| CF01               | 24630920          | Cap.Electrolytic | 4. 7MF   | M 50V  |
| CF02               | 24630920          | Cap.Electrolytic | 4. 7MF   | M 50V  |
| CF03               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| CF04               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| CF07               | 24206479          | Cap.Electrolytic | 4. 7MF   | M 50V  |
| CF08               | 24206479          | Cap.Electrolytic | 4. 7MF   | M 50V  |
| CF09               | 24630919          | Cap.Electrolytic | 10MF     | M 50V  |
| CF10               | 24630919          | Cap.Electrolytic | 10MF     | M 50V  |
| CF11               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| CF12               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CF13               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CF14               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| CF15               | 24206478          | Cap.Electrolytic | 0. 47MF  | M 50V  |
| CF16               | 24212822          | Cap.Ceramic      | 8200PF   | K 50V  |
| CF17               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| CF18               | 24203101          | Cap.Electrolytic | 100MF    | M 16V  |
| CF19               | 24206478          | Cap.Electrolytic | 0. 47MF  | M 50V  |
| CF20               | 24206478          | Cap.Electrolytic | 0. 47MF  | M 50V  |
| CF21               | 24630918          | Cap.Electrolytic | 47MF     | M 25V  |
| CF22               | 24630918          | Cap.Electrolytic | 47MF     | M 25V  |
| CF23               | 24203220          | Cap.Electrolytic | 22MF     | M 16V  |
| CK01               | 24630920          | Cap.Electrolytic | 4. 7MF   | M 50V  |
| CK02               | 24085988          | Cap.Electrolytic | 1MF      | M 50V  |
| CK03               | 24212472          | Cap.Ceramic      | 4700PF   | K 50V  |
| CK04               | 24206478          | Cap.Electrolytic | 0. 47MF  | M 50V  |
| CK05               | 24206479          | Cap.Electrolytic | 4. 7MF   | M 50V  |
| CK06               | 24203100          | Cap.Electrolytic | 10MF     | M 16V  |
| CK08               | 24591562          | Cap.Plastic      | 5600PF   | J 50V  |
| CK09               | 24630912          | Cap.Electrolytic | 22MF     | M 25V  |
| CK10               | 24630919          | Cap.Electrolytic | 10MF     | M 50V  |
| CK11               | 24538153          | Cap.Plastic      | 0. 015MF | J 50V  |
| CK12               | 24591152          | Cap.Plastic      | 1500PF   | J 50V  |
| CK13               | 24630919          | Cap.Electrolytic | 10MF     | M 50V  |
| CK14               | 24630916          | Cap.Electrolytic | 33MF     | M 25V  |
| CK15               | 24203100          | Cap.Electrolytic | 10MF     | M 16V  |
| CK16               | 24630919          | Cap.Electrolytic | 10MF     | M 50V  |
| CK17               | 24538123          | Cap.Plastic      | 0. 012MF | J 50V  |
| CK18               | 24630919          | Cap.Electrolytic | 10MF     | M 50V  |
| CK19               | 24630921          | Cap.Electrolytic | 1MF      | M 50V  |
| CK20               | 24630919          | Cap.Electrolytic | 10MF     | M 50V  |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION      |          |       |
|--------------------|-------------------|------------------|----------|-------|
| CK21               | 24206478          | Cap.Electrolytic | 0. 47MF  | M 50V |
| CK22               | 24630920          | Cap.Electrolytic | 4. 7MF   | M 50V |
| CK23               | 24630912          | Cap.Electrolytic | 22MF     | M 25V |
| CK24               | 24203100          | Cap.Electrolytic | 10MF     | M 16V |
| CK25               | 24203101          | Cap.Electrolytic | 100MF    | M 16V |
| CK26               | 24591183          | Cap.Plastic      | 0. 018MF | J 50V |
| CK27               | 24591562          | Cap.Plastic      | 5600PF   | J 50V |
| CK28               | 24630919          | Cap.Electrolytic | 10MF     | M 50V |
| CK29               | 24630920          | Cap.Electrolytic | 4. 7MF   | M 50V |
| CK30               | 24630915          | Cap.Electrolytic | 220MF    | M 10V |
| CK31               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V |
| CK32               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V |
| CK33               | 24591332          | Cap.Plastic      | 3300PF   | J 50V |
| CK34               | 24085002          | Cap.Electrolytic | 2. 2MF   | M 16V |
| CK61               | 24591682          | Cap.Plastic      | 6800PF   | J 50V |
| CK62               | 24436100          | Cap.Ceramic      | 10PF     | J 50V |
| CK63               | 24212152          | Cap.Ceramic      | 1500PF   | K 50V |
| CM01               | 24630920          | Cap.Electrolytic | 4. 7MF   | M 50V |
| CM02               | 24085988          | Cap.Electrolytic | 1MF      | M 50V |
| CM03               | 24212472          | Cap.Ceramic      | 4700PF   | K 50V |
| CM04               | 24206478          | Cap.Electrolytic | 0. 47MF  | M 50V |
| CM05               | 24206479          | Cap.Electrolytic | 4. 7MF   | M 50V |
| CM06               | 24203100          | Cap.Electrolytic | 10MF     | M 16V |
| CM08               | 24591562          | Cap.Plastic      | 5600PF   | J 50V |
| CM09               | 24630912          | Cap.Electrolytic | 22MF     | M 25V |
| CM10               | 24630919          | Cap.Electrolytic | 10MF     | M 50V |
| CM11               | 24538153          | Cap.Plastic      | 0. 015MF | J 50V |
| CM12               | 24591152          | Cap.Plastic      | 1500PF   | J 50V |
| CM13               | 24630919          | Cap.Electrolytic | 10MF     | M 50V |
| CM14               | 24630916          | Cap.Electrolytic | 33MF     | M 25V |
| CM15               | 24203100          | Cap.Electrolytic | 10MF     | M 16V |
| CM16               | 24630919          | Cap.Electrolytic | 10MF     | M 50V |
| CM17               | 24538123          | Cap.Plastic      | 0. 012MF | J 50V |
| CM18               | 24630919          | Cap.Electrolytic | 10MF     | M 50V |
| CM19               | 24630921          | Cap.Electrolytic | 1MF      | M 50V |
| CM20               | 24630919          | Cap.Electrolytic | 10MF     | M 50V |
| CM21               | 24206478          | Cap.Electrolytic | 0. 47MF  | M 50V |
| CM22               | 24630920          | Cap.Electrolytic | 4. 7MF   | M 50V |
| CM23               | 24630912          | Cap.Electrolytic | 22MF     | M 25V |
| CM24               | 24203100          | Cap.Electrolytic | 10MF     | M 16V |
| CM25               | 24203101          | Cap.Electrolytic | 100MF    | M 16V |
| CM26               | 24591183          | Cap.Plastic      | 0. 018MF | J 50V |
| CM27               | 24591562          | Cap.Plastic      | 5600PF   | J 50V |
| CM28               | 24630919          | Cap.Electrolytic | 10MF     | M 50V |
| CM29               | 24630920          | Cap.Electrolytic | 4. 7MF   | M 50V |
| CM30               | 24630915          | Cap.Electrolytic | 220MF    | M 10V |
| CM31               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V |
| CM32               | 24474103          | Cap.Ceramic      | 0. 01MF  | N 50V |
| CM33               | 24591332          | Cap.Plastic      | 3300PF   | J 50V |
| CM34               | 24085002          | Cap.Electrolytic | 2. 2MF   | M 16V |
| CM61               | 24591682          | Cap.Plastic      | 6800PF   | J 50V |
| CM62               | 24436100          | Cap.Ceramic      | 10PF     | J 50V |
| CM63               | 24212152          | Cap.Ceramic      | 1500PF   | K 50V |
| CX98               | 24203100          | Cap.Electrolytic | 10MF     | M 16V |
| CX99               | 24090974          | Cap.Electrolytic | 0.1F     | M 6V  |

#### RESISTORS

|      |          |            |       |        |
|------|----------|------------|-------|--------|
| R601 | 24366161 | Res.Carbon | 160   | J 1/6W |
| R602 | 24366102 | Res.Carbon | 1K    | J 1/6W |
| R603 | 24366472 | Res.Carbon | 4. 7K | J 1/6W |
| R604 | 24366473 | Res.Carbon | 47K   | J 1/6W |
| R673 | 24366472 | Res.Carbon | 4. 7K | J 1/6W |
| R674 | 24366201 | Res.Carbon | 200   | J 1/6W |
| R677 | 24366103 | Res.Carbon | 10K   | J 1/6W |
| R678 | 24366103 | Res.Carbon | 10K   | J 1/6W |
| R679 | 24366334 | Res.Carbon | 330K  | J 1/6W |
| R702 | 24366272 | Res.Carbon | 2. 7K | J 1/6W |
| R703 | 24366472 | Res.Carbon | 4. 7K | J 1/6W |
| R704 | 24366331 | Res.Carbon | 330   | J 1/6W |
| R705 | 24366204 | Res.Carbon | 200K  | J 1/6W |
| R706 | 24366271 | Res.Carbon | 270   | J 1/6W |
| R707 | 24366123 | Res.Carbon | 12K   | J 1/6W |
| R708 | 24366363 | Res.Carbon | 36K   | J 1/6W |
| R709 | 24366332 | Res.Carbon | 3. 3K | J 1/6W |
| R712 | 24366222 | Res.Carbon | 2. 2K | J 1/6W |
| R713 | 24366472 | Res.Carbon | 4. 7K | J 1/6W |



| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION   |       |        |
|--------------------|-------------------|---------------|-------|--------|
| R714               | 24366105          | Res. Carbon   | 1M    | J 1/6W |
| R715               | 24366510          | Res. Carbon   | 51    | J 1/6W |
| R716               | 24366303          | Res. Carbon   | 30K   | J 1/6W |
| R717               | 24366201          | Res. Carbon   | 200   | J 1/6W |
| R718               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R719               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R720               | 24366682          | Res. Carbon   | 6. 8K | J 1/6W |
| R721               | 24366101          | Res. Carbon   | 100   | J 1/6W |
| R722               | 24366229          | Res. Carbon   | 2. 2  | J 1/6W |
| R727               | 24366104          | Res. Carbon   | 100K  | J 1/6W |
| R728               | 24366104          | Res. Carbon   | 100K  | J 1/6W |
| ΔR729              | 24545479          | Res. Fusible  | 4. 7  | J 1/4W |
| R730               | 24366563          | Res. Carbon   | 56K   | J 1/6W |
| R731               | 24366332          | Res. Carbon   | 3. 3K | J 1/6W |
| R732               | 24366152          | Res. Carbon   | 1. 5K | J 1/6W |
| R733               | 24366152          | Res. Carbon   | 1. 5K | J 1/6W |
| R734               | 24366473          | Res. Carbon   | 47K   | J 1/6W |
| R735               | 24366473          | Res. Carbon   | 47K   | J 1/6W |
| R736               | 24366104          | Res. Carbon   | 100K  | J 1/6W |
| R737               | 24366823          | Res. Carbon   | 82K   | J 1/6W |
| R738               | 24366563          | Res. Carbon   | 56K   | J 1/6W |
| R740               | 24366681          | Res. Carbon   | 680   | J 1/6W |
| R741               | 24366560          | Res. Carbon   | 56    | J 1/6W |
| R742               | 24366332          | Res. Carbon   | 3. 3K | J 1/6W |
| R743               | 24366333          | Res. Carbon   | 33K   | J 1/6W |
| R744               | 24366682          | Res. Carbon   | 6. 8K | J 1/6W |
| R745               | 24366333          | Res. Carbon   | 33K   | J 1/6W |
| R746               | 24366332          | Res. Carbon   | 3. 3K | J 1/6W |
| R747               | 24366332          | Res. Carbon   | 3. 3K | J 1/6W |
| R748               | 24366102          | Res. Carbon   | 1K    | J 1/6W |
| R749               | 24366102          | Res. Carbon   | 1K    | J 1/6W |
| R751               | 24066982          | Res. Variable | 10k   |        |
| R752               | 24066978          | Res. Variable | 200k  |        |
| R901               | 24366104          | Res. Carbon   | 100K  | J 1/6W |
| R902               | 24366473          | Res. Carbon   | 47K   | J 1/6W |
| R903               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R905               | 24366223          | Res. Carbon   | 22K   | J 1/6W |
| R907               | 24366473          | Res. Carbon   | 47K   | J 1/6W |
| R910               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R911               | 24366223          | Res. Carbon   | 22K   | J 1/6W |
| R913               | 24366223          | Res. Carbon   | 22K   | J 1/6W |
| R915               | 24366822          | Res. Carbon   | 8. 2K | J 1/6W |
| R916               | 24366105          | Res. Carbon   | 1M    | J 1/6W |
| R917               | 24366562          | Res. Carbon   | 5. 6K | J 1/6W |
| R918               | 24366303          | Res. Carbon   | 30K   | J 1/6W |
| R919               | 24366822          | Res. Carbon   | 8. 2K | J 1/6W |
| R921               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R922               | 24366113          | Res. Carbon   | 11K   | J 1/6W |
| R923               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R924               | 24366563          | Res. Carbon   | 56K   | J 1/6W |
| R925               | 24366332          | Res. Carbon   | 3. 3K | J 1/6W |
| R926               | 24366104          | Res. Carbon   | 100K  | J 1/6W |
| R927               | 24366181          | Res. Carbon   | 180   | J 1/6W |
| R928               | 24366222          | Res. Carbon   | 2. 2K | J 1/6W |
| R929               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R930               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R941               | 24366223          | Res. Carbon   | 22K   | J 1/6W |
| R942               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R944               | 24366103          | Res. Carbon   | 10K   | J 1/6W |
| R945               | 24366822          | Res. Carbon   | 8. 2K | J 1/6W |
| R946               | 24366221          | Res. Carbon   | 220   | J 1/6W |
| R947               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R948               | 24376152          | Res. Carbon   | 1. 5K | J 1/2W |
| R949               | 24366152          | Res. Carbon   | 1. 5K | J 1/6W |
| R952               | 24066953          | Res. Variable | 100K  |        |
| R960               | 24366152          | Res. Carbon   | 1. 5K | J 1/6W |
| R961               | 24366152          | Res. Carbon   | 1. 5K | J 1/6W |
| R962               | 24366822          | Res. Carbon   | 8. 2K | J 1/6W |
| R963               | 24366223          | Res. Carbon   | 22K   | J 1/6W |
| R964               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |
| R965               | 24366102          | Res. Carbon   | 1K    | J 1/6W |
| R966               | 24366181          | Res. Carbon   | 180   | J 1/6W |
| R967               | 24366181          | Res. Carbon   | 180   | J 1/6W |
| R968               | 24366821          | Res. Carbon   | 820   | J 1/6W |
| R969               | 24366821          | Res. Carbon   | 820   | J 1/6W |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION      |       |        |
|--------------------|-------------------|------------------|-------|--------|
| R970               | 24366361          | Res. Carbon      | 360   | J 1/6W |
| R971               | 24366181          | Res. Carbon      | 180   | J 1/6W |
| R972               | 24366152          | Res. Carbon      | 1. 5K | J 1/6W |
| R973               | 24366224          | Res. Carbon      | 220K  | J 1/6W |
| R976               | 24553151          | Res. Oxide Metal | 150   | J 1W   |
| R978               | 24366101          | Res. Carbon      | 100   | J 1/6W |
| R979               | 24366122          | Res. Carbon      | 1. 2K | J 1/6W |
| R980               | 24366182          | Res. Carbon      | 1. 8K | J 1/6W |
| R981               | 24366471          | Res. Carbon      | 470   | J 1/6W |
| R982               | 24366302          | Res. Carbon      | 3K    | J 1/6W |
| R987               | 24366221          | Res. Carbon      | 220   | J 1/6W |
| R988               | 24366332          | Res. Carbon      | 3. 3K | J 1/6W |
| R991               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| R994               | 24366153          | Res. Carbon      | 15K   | J 1/6W |
| R995               | 24366102          | Res. Carbon      | 1K    | J 1/8W |
| RF01               | 24366102          | Res. Carbon      | 1K    | J 1/6W |
| RF02               | 24366102          | Res. Carbon      | 1K    | J 1/6W |
| RF03               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF04               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF05               | 24366202          | Res. Carbon      | 2K    | J 1/6W |
| RF06               | 24366202          | Res. Carbon      | 2K    | J 1/6W |
| RF07               | 24366332          | Res. Carbon      | 3. 3K | J 1/6W |
| RF08               | 24366332          | Res. Carbon      | 3. 3K | J 1/6W |
| RF09               | 24366913          | Res. Carbon      | 91K   | J 1/6W |
| RF10               | 24366913          | Res. Carbon      | 91K   | J 1/6W |
| RF11               | 24366153          | Res. Carbon      | 15K   | J 1/6W |
| RF12               | 24366153          | Res. Carbon      | 15K   | J 1/6W |
| RF13               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF14               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF15               | 24366223          | Res. Carbon      | 22K   | J 1/6W |
| RF16               | 24366223          | Res. Carbon      | 22K   | J 1/6W |
| RF17               | 24366153          | Res. Carbon      | 15K   | J 1/6W |
| RF18               | 24366473          | Res. Carbon      | 47K   | J 1/6W |
| RF19               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| RF20               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF21               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF22               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| RF23               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| RF24               | 24366102          | Res. Carbon      | 1K    | J 1/6W |
| RF25               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| RF26               | 24366102          | Res. Carbon      | 1K    | J 1/6W |
| RF27               | 24366392          | Res. Carbon      | 3. 9K | J 1/6W |
| RF28               | 24366392          | Res. Carbon      | 3. 9K | J 1/6W |
| RF29               | 24366152          | Res. Carbon      | 1. 5K | J 1/6W |
| RF30               | 24366152          | Res. Carbon      | 1. 5K | J 1/6W |
| RF31               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF32               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF33               | 24366182          | Res. Carbon      | 1. 8K | J 1/6W |
| RF34               | 24366473          | Res. Carbon      | 47K   | J 1/6W |
| RF35               | 24367203          | Res. Carbon      | 20K   | G 1/6W |
| RF36               | 24367203          | Res. Carbon      | 20K   | G 1/6W |
| RF37               | 24367822          | Res. Carbon      | 8. 2K | G 1/6W |
| RF38               | 24367822          | Res. Carbon      | 8. 2K | G 1/6W |
| RF39               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| RF40               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| RF41               | 24366471          | Res. Carbon      | 470   | J 1/6W |
| RF42               | 24366471          | Res. Carbon      | 470   | J 1/6W |
| RF43               | 24366221          | Res. Carbon      | 220   | J 1/6W |
| RF44               | 24366221          | Res. Carbon      | 220   | J 1/6W |
| RF45               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| RF46               | 24366103          | Res. Carbon      | 10K   | J 1/6W |
| RF47               | 24366274          | Res. Carbon      | 270K  | J 1/6W |
| RF48               | 24366274          | Res. Carbon      | 270K  | J 1/6W |
| RF49               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF60               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF61               | 24366152          | Res. Carbon      | 1. 5K | J 1/6W |
| RF62               | 24366152          | Res. Carbon      | 1. 5K | J 1/6W |
| RF63               | 24366751          | Res. Carbon      | 750   | J 1/6W |
| RF64               | 24366751          | Res. Carbon      | 750   | J 1/6W |
| RF65               | 24366153          | Res. Carbon      | 15K   | J 1/6W |
| RF66               | 24366223          | Res. Carbon      | 22K   | J 1/6W |
| RF67               | 24366433          | Res. Carbon      | 43K   | J 1/6W |
| RF68               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF69               | 24366104          | Res. Carbon      | 100K  | J 1/6W |
| RF70               | 24366103          | Res. Carbon      | 10K   | J 1/6W |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION   |       |        |
|--------------------|----------------|---------------|-------|--------|
| RF71               | 24366472       | Res. Carbon   | 4. 7K | J 1/6W |
| RF72               | 24366122       | Res. Carbon   | 1. 2K | J 1/6W |
| RF73               | 24366103       | Res. Carbon   | 10K   | J 1/6W |
| RF74               | 24366103       | Res. Carbon   | 10K   | J 1/6W |
| RF75               | 24366124       | Res. Carbon   | 120K  | J 1/6W |
| RF76               | 24366124       | Res. Carbon   | 120K  | J 1/6W |
| RF77               | 24366104       | Res. Carbon   | 100K  | J 1/6W |
| RF78               | 24366104       | Res. Carbon   | 100K  | J 1/6W |
| RF79               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RK01               | 24366274       | Res. Carbon   | 270K  | J 1/6W |
| RK02               | 24367393       | Res. Carbon   | 39K   | G 1/6W |
| RK03               | 24366223       | Res. Carbon   | 22K   | J 1/6W |
| RK04               | 24367223       | Res. Carbon   | 22K   | G 1/6W |
| RK05               | 24366223       | Res. Carbon   | 22K   | J 1/6W |
| RK06               | 24366472       | Res. Carbon   | 4. 7K | J 1/6W |
| RK07               | 24366334       | Res. Carbon   | 330K  | J 1/6W |
| RK08               | 24366751       | Res. Carbon   | 750   | J 1/6W |
| RK09               | 24366334       | Res. Carbon   | 330K  | J 1/6W |
| RK11               | 24366103       | Res. Carbon   | 10K   | J 1/6W |
| RK12               | 24367202       | Res. Carbon   | 2K    | G 1/6W |
| RK13               | 24367681       | Res. Carbon   | 680   | G 1/6W |
| RK14               | 24367302       | Res. Carbon   | 3K    | G 1/6W |
| RK15               | 24366103       | Res. Carbon   | 10K   | J 1/6W |
| RK16               | 24366123       | Res. Carbon   | 12K   | J 1/6W |
| RK17               | 24366302       | Res. Carbon   | 3K    | J 1/6W |
| RK18               | 24366911       | Res. Carbon   | 910   | G 1/6W |
| RK20               | 24366183       | Res. Carbon   | 18K   | J 1/6W |
| RK21               | 24366202       | Res. Carbon   | 2K    | J 1/6W |
| RK22               | 24366473       | Res. Carbon   | 47K   | J 1/6W |
| RK23               | 24366104       | Res. Carbon   | 100K  | J 1/6W |
| RK24               | 24367823       | Res. Carbon   | 82K   | G 1/6W |
| RK25               | 24367203       | Res. Carbon   | 20K   | G 1/6W |
| RK26               | 24366221       | Res. Carbon   | 220   | J 1/6W |
| RK27               | 24366751       | Res. Carbon   | 750   | J 1/6W |
| RK31               | 24366152       | Res. Carbon   | 1. 5K | J 1/6W |
| RK32               | 24366183       | Res. Carbon   | 18K   | J 1/6W |
| RK33               | 24366333       | Res. Carbon   | 33K   | J 1/6W |
| RK34               | 24366334       | Res. Carbon   | 330K  | J 1/6W |
| RK35               | 24366333       | Res. Carbon   | 33K   | J 1/6W |
| RK36               | 24366680       | Res. Carbon   | 68    | J 1/6W |
| RK37               | 24366222       | Res. Carbon   | 2. 2K | J 1/6W |
| RK41               | 24366622       | Res. Carbon   | 6. 2K | J 1/6W |
| RK42               | 24366113       | Res. Carbon   | 11K   | J 1/6W |
| RK43               | 24366133       | Res. Carbon   | 13K   | J 1/6W |
| RK44               | 24366513       | Res. Carbon   | 51K   | J 1/6W |
| RK45               | 24327163       | Res. Metal    | 16K   | F 1/4W |
| RK46               | 24366222       | Res. Carbon   | 2. 2K | J 1/6W |
| RK47               | 24366112       | Res. Carbon   | 1. 1K | J 1/6W |
| RK48               | 24366272       | Res. Carbon   | 2. 7K | J 1/6W |
| RK49               | 24366222       | Res. Carbon   | 2. 2K | J 1/6W |
| RK52               | 24066983       | Res. Variable | 5K    |        |
| RK53               | 24066949       | Res. Variable | 100K  |        |
| RK54               | 24066830       | Res. Variable | 100K  |        |
| RK55               | 24066952       | Res. Variable | 10K   |        |
| RK60               | 24367472       | Res. Carbon   | 4. 7K | G 1/6W |
| RK61               | 24366153       | Res. Carbon   | 15K   | J 1/6W |
| RK62               | 24366822       | Res. Carbon   | 8. 2K | J 1/6W |
| RK63               | 24366302       | Res. Carbon   | 3K    | J 1/6W |
| RK64               | 24366181       | Res. Carbon   | 180   | J 1/6W |
| RK65               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RK66               | 24366273       | Res. Carbon   | 27K   | J 1/6W |
| RK67               | 24366473       | Res. Carbon   | 47K   | J 1/6W |
| RK68               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RK69               | 24327623       | Res. Metal    | 62K   | F 1/4W |
| RK71               | 24366912       | Res. Carbon   | 9. 1K | J 1/6W |
| RL70               | 24366272       | Res. Carbon   | 2. 7K | J 1/6W |
| RL71               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RL72               | 24366103       | Res. Carbon   | 10K   | J 1/6W |
| RL73               | 24366221       | Res. Carbon   | 220   | J 1/6W |
| RL75               | 24366472       | Res. Carbon   | 4. 7K | J 1/6W |
| RL76               | 24366472       | Res. Carbon   | 4. 7K | J 1/6W |
| RL79               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RL80               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RL81               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RL82               | 24366102       | Res. Carbon   | 1K    | J 1/6W |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION   |       |        |
|--------------------|----------------|---------------|-------|--------|
| RL83               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RL84               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RL85               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RL86               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RL87               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RL88               | 24366101       | Res. Carbon   | 100   | J 1/6W |
| RL90               | 24366103       | Res. Carbon   | 10K   | J 1/6W |
| RL93               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RM01               | 24366274       | Res. Carbon   | 270K  | J 1/6W |
| RM02               | 24367393       | Res. Carbon   | 39K   | G 1/6W |
| RM03               | 24366223       | Res. Carbon   | 22K   | J 1/6W |
| RM04               | 24367223       | Res. Carbon   | 22K   | G 1/6W |
| RM05               | 24366223       | Res. Carbon   | 22K   | J 1/6W |
| RM06               | 24366472       | Res. Carbon   | 4. 7K | J 1/6W |
| RM07               | 24366334       | Res. Carbon   | 330K  | J 1/6W |
| RM08               | 24366751       | Res. Carbon   | 750   | J 1/6W |
| RM09               | 24366334       | Res. Carbon   | 330K  | J 1/6W |
| RM11               | 24366103       | Res. Carbon   | 10K   | J 1/6W |
| RM12               | 24367202       | Res. Carbon   | 2K    | G 1/6W |
| RM13               | 24367681       | Res. Carbon   | 680   | G 1/6W |
| RM14               | 24367302       | Res. Carbon   | 3K    | G 1/6W |
| RM15               | 24366103       | Res. Carbon   | 10K   | J 1/6W |
| RM16               | 24366123       | Res. Carbon   | 12K   | J 1/6W |
| RM17               | 24366302       | Res. Carbon   | 3K    | J 1/6W |
| RM18               | 24366911       | Res. Carbon   | 910   | G 1/6W |
| RM20               | 24366183       | Res. Carbon   | 18K   | J 1/6W |
| RM21               | 24366202       | Res. Carbon   | 2K    | J 1/6W |
| RM22               | 24366124       | Res. Carbon   | 120K  | J 1/6W |
| RM23               | 24366104       | Res. Carbon   | 100K  | J 1/6W |
| RM24               | 24367823       | Res. Carbon   | 82K   | G 1/6W |
| RM25               | 24367203       | Res. Carbon   | 20K   | G 1/6W |
| RM26               | 24366221       | Res. Carbon   | 220   | J 1/6W |
| RM27               | 24366751       | Res. Carbon   | 750   | J 1/6W |
| RM31               | 24366152       | Res. Carbon   | 1. 5K | J 1/6W |
| RM32               | 24366183       | Res. Carbon   | 18K   | J 1/6W |
| RM33               | 24366333       | Res. Carbon   | 33K   | J 1/6W |
| RM34               | 24366334       | Res. Carbon   | 330K  | J 1/6W |
| RM35               | 24366333       | Res. Carbon   | 33K   | J 1/6W |
| RM36               | 24366680       | Res. Carbon   | 68    | J 1/6W |
| RM37               | 24366222       | Res. Carbon   | 2. 2K | J 1/6W |
| RM41               | 24366622       | Res. Carbon   | 6. 2K | J 1/6W |
| RM42               | 24366113       | Res. Carbon   | 11K   | J 1/6W |
| RM43               | 24366133       | Res. Carbon   | 13K   | J 1/6W |
| RM44               | 24366393       | Res. Carbon   | 39K   | J 1/6W |
| RM45               | 24327163       | Res. Metal    | 16K   | F 1/4W |
| RM46               | 24366222       | Res. Carbon   | 2. 2K | J 1/6W |
| RM47               | 24366112       | Res. Carbon   | 1. 1K | J 1/6W |
| RM48               | 24366272       | Res. Carbon   | 2. 7K | J 1/6W |
| RM49               | 24366222       | Res. Carbon   | 2. 2K | J 1/6W |
| RM52               | 24066983       | Res. Variable | 5K    |        |
| RM53               | 24066949       | Res. Variable | 100K  |        |
| RM54               | 24066830       | Res. Variable | 100K  |        |
| RM55               | 24066982       | Res. Variable | 10K   |        |
| RM60               | 24367123       | Res. Carbon   | 12K   | G 1/6W |
| RM61               | 24366153       | Res. Carbon   | 15K   | J 1/6W |
| RM62               | 24366822       | Res. Carbon   | 8. 2K | J 1/6W |
| RM63               | 24366302       | Res. Carbon   | 3K    | J 1/6W |
| RM64               | 24366181       | Res. Carbon   | 180   | J 1/6W |
| RM65               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RM66               | 24366273       | Res. Carbon   | 27K   | J 1/6W |
| RM67               | 24366473       | Res. Carbon   | 47K   | J 1/6W |
| RM68               | 24366102       | Res. Carbon   | 1K    | J 1/6W |
| RM69               | 24327623       | Res. Metal    | 62K   | F 1/4W |
| RM71               | 24366912       | Res. Carbon   | 9. 1K | J 1/6W |
| RX90               | 24366121       | Res. Carbon   | 120   | J 1/6W |
| RX91               | 24366301       | Res. Carbon   | 300   | J 1/6W |
| RX92               | 24366432       | Res. Carbon   | 4. 3K | J 1/6W |
| RX93               | 24366911       | Res. Carbon   | 910   | G 1/6W |
| RX94               | 24366223       | Res. Carbon   | 22K   | J 1/6W |
| RX95               | 24366752       | Res. Carbon   | 7. 5K | J 1/6W |
| RY79               | 24366105       | Res. Carbon   | 1M    | J 1/6W |
| MISCELLANEOUS      |                |               |       |        |
| P990               | 23365142       | Phono Jack    |       |        |
| P991               | 23365140       | Phono Jack    |       |        |
| S701               | 70145204       | Switch        |       |        |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |
|--------------------|----------------|-------------|
|--------------------|----------------|-------------|

|      |          |                        |
|------|----------|------------------------|
| T701 | 23224971 | Coil.TLN1053           |
| X602 | 23153847 | Resonator,4MHz.TCR1014 |
| ZK01 | 23107858 | Filter.TLC1048         |
| ZK02 | 23107791 | Filter.TLC1073         |
| ZM01 | 23107858 | Filter.TLC1048         |
| ZM02 | 23107792 | Filter.TLC1072         |

UG02 70197388 P C Board Assy.MIC NT Jack

#### TRANSISTORS

|      |          |            |           |
|------|----------|------------|-----------|
| QE97 | A6332430 | Transistor | 2SC2458-Y |
| QE98 | A6332540 | Transistor | 2SC2668-Y |
| QE99 | A6332540 | Transistor | 2SC2668-Y |

#### CAPACITORS

|      |          |                  |         |       |
|------|----------|------------------|---------|-------|
| CE97 | 24591103 | Cap.Plastic      | 0. 01MF | J 50V |
| CE98 | 24436181 | Cap.Ceramic      | 180PF   | J 50V |
| CE99 | 24203470 | Cap.Electrolytic | 47MF    | M 16V |

#### RESISTORS

|      |          |            |       |        |
|------|----------|------------|-------|--------|
| RE94 | 24366102 | Res.Carbon | 1K    | J 1/6W |
| RE95 | 24366753 | Res.Carbon | 75K   | J 1/6W |
| RE96 | 24366103 | Res.Carbon | 10K   | J 1/6W |
| RE97 | 24366753 | Res.Carbon | 75K   | J 1/6W |
| RE98 | 24366153 | Res.Carbon | 15K   | J 1/6W |
| RE99 | 24366182 | Res.Carbon | 1. 8K | J 1/6W |

#### MISCELLANEOUS

|      |          |                       |
|------|----------|-----------------------|
| PE98 | 70163110 | Receptacle            |
| PK04 | 23364273 | Microhone Jack.3. 5mm |
| PM04 | 23364273 | Microhone Jack.3. 5mm |

UG03 70197389 P C Board Assy.Pre Amp

#### MISCELLANEOUS

P910 70161071 Jack.Remote Control

UV01 70197387 P C Board Assy.Head Phone Jack

#### INTEGRATED CIRCUITS

|       |          |    |         |
|-------|----------|----|---------|
| ICV01 | B0379090 | IC | TA8609P |
| ICV02 | B0379190 | IC | TA8619P |

#### TRANSISTORS

|      |          |            |           |
|------|----------|------------|-----------|
| QV03 | A6534430 | Transistor | 2SA1048-Y |
| QV04 | A6534430 | Transistor | 2SA1048-Y |
| QV05 | A6002040 | Transistor | RN1204    |

#### DIODES

|      |          |       |        |
|------|----------|-------|--------|
| DV01 | A7160570 | Diode | 1SS176 |
| DV02 | A7160570 | Diode | 1SS176 |
| DV03 | A7160570 | Diode | 1SS176 |
| DV04 | A7160570 | Diode | 1SS176 |
| DV05 | A7160570 | Diode | 1SS176 |

#### COILS

|      |          |              |           |
|------|----------|--------------|-----------|
| LV01 | 23237975 | Coil.Peaking | TRF4101AC |
| LV02 | 23239835 | Coil.Peaking | TRF4109AJ |
| LV03 | 23239835 | Coil.Peaking | TRF4109AJ |
| LV04 | 23239835 | Coil.Peaking | TRF4109AJ |
| LV05 | 23239835 | Coil.Peaking | TRF4109AJ |
| LV06 | 23237979 | Coil.Peaking | TRF4470AC |
| LV07 | 23237970 | Coil.Peaking | TRF4271AC |
| LV09 | 23237994 | Coil.Peaking | TRF4279AC |
| LV10 | 23238923 | Coil.Peaking | TRF4829AC |

#### CAPACITORS

|      |          |                  |          |        |
|------|----------|------------------|----------|--------|
| CV01 | 24201470 | Cap.Electrolytic | 47MF     | M 6.3V |
| CV02 | 24538473 | Cap.Plastic      | 0. 047MF | J 50V  |
| CV03 | 24206010 | Cap.Electrolytic | 1MF      | M 50V  |
| CV04 | 24206010 | Cap.Electrolytic | 1MF      | M 50V  |
| CV05 | 24206010 | Cap.Electrolytic | 1MF      | M 50V  |
| CV06 | 24206010 | Cap.Electrolytic | 1MF      | M 50V  |
| CV07 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV08 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV09 | 24473470 | Cap.Ceramic      | 47PF     | J 50V  |
| CV10 | 24473470 | Cap.Ceramic      | 47PF     | J 50V  |
| CV11 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV12 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV13 | 24473200 | Cap.Ceramic      | 20PF     | J 50V  |
| CV14 | 24473200 | Cap.Ceramic      | 20PF     | J 50V  |
| CV15 | 24474102 | Cap.Ceramic      | 1000PF   | K 50V  |
| CV16 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV17 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV18 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |
|--------------------|----------------|-------------|
|--------------------|----------------|-------------|

|      |          |                  |          |        |
|------|----------|------------------|----------|--------|
| CV19 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV20 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV21 | 24201470 | Cap.Electrolytic | 47MF     | M 6.3V |
| CV22 | 24473270 | Cap.Ceramic      | 27PF     | J 50V  |
| CV23 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV24 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV25 | 24436121 | Cap.Ceramic      | 120PF    | J 50V  |
| CV26 | 24436121 | Cap.Ceramic      | 120PF    | J 50V  |
| CV28 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV29 | 24538683 | Cap.Plastic      | 0. 068MF | J 50V  |
| CV30 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V  |
| CV31 | 24538683 | Cap.Plastic      | 0. 068MF | J 50V  |

#### RESISTORS

|      |          |              |       |        |
|------|----------|--------------|-------|--------|
| RV01 | 24366680 | Res.Carbon   | 68    | J 1/6W |
| RV02 | 24366680 | Res.Carbon   | 68    | J 1/6W |
| RV03 | 24366182 | Res.Carbon   | 1. 8K | J 1/6W |
| RV04 | 24366471 | Res.Carbon   | 470   | J 1/6W |
| RV06 | 24366301 | Res.Carbon   | 300   | J 1/6W |
| RV07 | 24366182 | Res.Carbon   | 1. 8K | J 1/6W |
| RV08 | 24366301 | Res.Carbon   | 300   | J 1/6W |
| RV09 | 24366471 | Res.Carbon   | 470   | J 1/6W |
| RV10 | 24366821 | Res.Carbon   | 820   | J 1/6W |
| RV11 | 24366821 | Res.Carbon   | 820   | J 1/6W |
| RV12 | 24366821 | Res.Carbon   | 820   | J 1/6W |
| RV13 | 24366821 | Res.Carbon   | 820   | J 1/6W |
| RV14 | 24366103 | Res.Carbon   | 10K   | J 1/6W |
| RV15 | 24366273 | Res.Carbon   | 27K   | J 1/6W |
| RV16 | 24366112 | Res.Carbon   | 1. 1K | J 1/6W |
| RV17 | 24380100 | Res.Carbon   | 10    | J 1/8W |
| RV18 | 24366512 | Res.Carbon   | 5. 1K | J 1/6W |
| RV19 | 24366471 | Res.Carbon   | 470   | J 1/6W |
| RV20 | 24366512 | Res.Carbon   | 5. 1K | J 1/6W |
| RV21 | 24366581 | Res.Carbon   | 560   | J 1/6W |
| RV22 | 24366392 | Res.Carbon   | 3. 9K | J 1/6W |
| RV23 | 24366221 | Res.Carbon   | 220   | J 1/6W |
| RV24 | 24366161 | Res.Carbon   | 160   | J 1/6W |
| RV25 | 24366152 | Res.Carbon   | 1. 5K | J 1/6W |
| RV26 | 24366391 | Res.Carbon   | 390   | J 1/6W |
| RV27 | 24366273 | Res.Carbon   | 27K   | J 1/6W |
| RV28 | 24366182 | Res.Carbon   | 1. 8K | J 1/6W |
| RV29 | 24366512 | Res.Carbon   | 5. 1K | J 1/6W |
| RV30 | 24366152 | Res.Carbon   | 1. 5K | J 1/6W |
| RV31 | 24366183 | Res.Carbon   | 18K   | J 1/6W |
| RV35 | 24366103 | Res.Carbon   | 10K   | J 1/6W |
| RV51 | 24066985 | Res.Variable | 1K    |        |

#### MISCELLANEOUS

PV01 23901627 Socket.7P

UE01 70197318 P C Board Assy.New Timer

#### INTEGRATED CIRCUITS

|       |          |    |              |
|-------|----------|----|--------------|
| ICE01 | B0517774 | IC | 47C800N2227Z |
| ICE02 | 70119641 | IC | TGA8601      |
| ICE03 | 23119181 | IC | MB814616-12  |
| ICE04 | 23119181 | IC | MB814616-12  |
| ICE05 | B0349250 | IC | TA75393S     |

#### TRANSISTORS

|      |          |            |           |
|------|----------|------------|-----------|
| QE11 | A6533240 | Transistor | 2SA966-Y  |
| QE12 | A6534430 | Transistor | 2SA1048-Y |
| QE13 | A6332430 | Transistor | 2SC2458-Y |
| QE14 | A6332540 | Transistor | 2SC2668-Y |
| QE15 | A6332540 | Transistor | 2SC2668-Y |
| QE16 | A6332430 | Transistor | 2SC2458-Y |
| QE17 | A6534430 | Transistor | 2SA1048-Y |
| QE18 | A6332430 | Transistor | 2SC2458-Y |

#### DIODES

|      |          |             |            |
|------|----------|-------------|------------|
| DE02 | A7160570 | Diode       | 1SS176     |
| DE03 | A7110207 | Diode.Zener | 05Z 8. 2-X |
| DE04 | A7160570 | Diode       | 1SS176     |
| DE05 | 23118715 | Diode       | 1SS99      |
| DE06 | A7160570 | Diode       | 1SS176     |
| DE07 | 23118715 | Diode       | 1SS99      |

#### COILS

|      |          |                |            |
|------|----------|----------------|------------|
| LE01 | 70103011 | Coil.Bead Core | RH35061. 3 |
| LE02 | 23261984 | Coil.Choke     | HC3035     |
| LE03 | 23261984 | Coil.Choke     | HC3035     |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION      |           |        |
|--------------------|----------------|------------------|-----------|--------|
| LE04               | 23238913       | Coil,Peaking     | TRF4560AC |        |
| CAPACITORS         |                |                  |           |        |
| CE01               | 24202101       | Cap.Electrolytic | 100MF     | M 10V  |
| CE02               | 24474103       | Cap.Ceramic      | 0. 01MF   | N 50V  |
| CE03               | 24474103       | Cap.Ceramic      | 0. 01MF   | N 50V  |
| CE04               | 24473330       | Cap.Ceramic      | 33PF      | J 50V  |
| CE05               | 24473330       | Cap.Ceramic      | 33PF      | J 50V  |
| CE06               | 24202101       | Cap.Electrolytic | 100MF     | M 10V  |
| CE07               | 24474103       | Cap.Ceramic      | 0. 01MF   | N 50V  |
| CE08               | 24353050       | Cap.Ceramic      | 5PF       | C 50V  |
| CE09               | 24472150       | Cap.Ceramic      | 15PF      | J 50V  |
| CE10               | 24202101       | Cap.Electrolytic | 100MF     | M 10V  |
| CE11               | 24202101       | Cap.Electrolytic | 100MF     | M 10V  |
| CE12               | 24538104       | Cap.Plastic      | 0. 1MF    | J 50V  |
| CE13               | 24538104       | Cap.Plastic      | 0. 1MF    | J 50V  |
| CE14               | 24474103       | Cap.Ceramic      | 0. 01MF   | N 50V  |
| CE15               | 24474103       | Cap.Ceramic      | 0. 01MF   | N 50V  |
| CE16               | 24538104       | Cap.Plastic      | 0. 1MF    | J 50V  |
| CE17               | 24203101       | Cap.Electrolytic | 100MF     | M 16V  |
| CE18               | 24538104       | Cap.Plastic      | 0. 1MF    | J 50V  |
| CE19               | 24474181       | Cap.Ceramic      | 180PF     | K 50V  |
| CE20               | 24474151       | Cap.Ceramic      | 150PF     | K 50V  |
| CE21               | 24202101       | Cap.Electrolytic | 100MF     | M 10V  |
| CE22               | 24212222       | Cap.Ceramic      | 2200PF    | K 50V  |
| CE23               | 24203100       | Cap.Electrolytic | 10MF      | M 16V  |
| CE24               | 24203101       | Cap.Electrolytic | 100MF     | M 16V  |
| CE25               | 24203101       | Cap.Electrolytic | 100MF     | M 16V  |
| CE26               | 24203470       | Cap.Electrolytic | 47MF      | M 16V  |
| CE27               | 24202101       | Cap.Electrolytic | 100MF     | M 10V  |
| CE28               | 24538104       | Cap.Plastic      | 0. 1MF    | J 50V  |
| CE51               | 24093983       | Cap.Variable     | 2. 7PF    |        |
| RESISTORS          |                |                  |           |        |
| RE01               | 24366101       | Res.Carbon       | 100       | J 1/6W |
| RE02               | 24366101       | Res.Carbon       | 100       | J 1/6W |
| RE03               | 24366101       | Res.Carbon       | 100       | J 1/6W |
| RE04               | 24366102       | Res.Carbon       | 1K        | J 1/6W |
| RE05               | 24366681       | Res.Carbon       | 680       | J 1/6W |
| RE06               | 24366681       | Res.Carbon       | 680       | J 1/6W |
| RE07               | 24366681       | Res.Carbon       | 680       | J 1/6W |
| RE08               | 24366681       | Res.Carbon       | 680       | J 1/6W |
| RE09               | 24366681       | Res.Carbon       | 680       | J 1/6W |
| RE10               | 24366681       | Res.Carbon       | 680       | J 1/6W |
| RE11               | 24366681       | Res.Carbon       | 680       | J 1/6W |
| RE12               | 24366681       | Res.Carbon       | 680       | J 1/6W |
| RE13               | 24366102       | Res.Carbon       | 1K        | J 1/6W |
| RE14               | 24366511       | Res.Carbon       | 510       | J 1/6W |
| RE15               | 24366472       | Res.Carbon       | 4. 7K     | J 1/6W |
| RE16               | 24366301       | Res.Carbon       | 300       | J 1/6W |
| RE17               | 24366511       | Res.Carbon       | 510       | J 1/6W |
| RE18               | 24366301       | Res.Carbon       | 300       | J 1/6W |
| RE19               | 24366201       | Res.Carbon       | 200       | J 1/6W |
| RE20               | 24366102       | Res.Carbon       | 1K        | J 1/6W |
| RE21               | 24366750       | Res.Carbon       | 75        | J 1/6W |
| RE22               | 24366103       | Res.Carbon       | 10K       | J 1/6W |
| RE23               | 24366223       | Res.Carbon       | 22K       | J 1/6W |
| RE24               | 24366223       | Res.Carbon       | 22K       | J 1/6W |
| RE25               | 24366392       | Res.Carbon       | 3. 9K     | J 1/6W |
| RE26               | 24366392       | Res.Carbon       | 3. 9K     | J 1/6W |
| RE27               | 24366274       | Res.Carbon       | 270K      | J 1/6W |
| RE28               | 24366104       | Res.Carbon       | 100K      | J 1/6W |
| RE29               | 24366103       | Res.Carbon       | 10K       | J 1/6W |
| RE30               | 24366103       | Res.Carbon       | 10K       | J 1/6W |
| RE32               | 24366102       | Res.Carbon       | 1K        | J 1/6W |
| RE33               | 24366273       | Res.Carbon       | 27K       | J 1/6W |
| RE34               | 24366753       | Res.Carbon       | 75K       | J 1/6W |
| RE35               | 24366203       | Res.Carbon       | 20K       | J 1/6W |
| RE36               | 24366153       | Res.Carbon       | 15K       | J 1/6W |
| RE37               | 24366104       | Res.Carbon       | 100K      | J 1/6W |
| RE38               | 24366103       | Res.Carbon       | 10K       | J 1/6W |
| RE39               | 24366303       | Res.Carbon       | 30K       | J 1/6W |
| RE40               | 24366163       | Res.Carbon       | 16K       | J 1/6W |
| RE41               | 24366103       | Res.Carbon       | 10K       | J 1/6W |
| RE42               | 24366102       | Res.Carbon       | 1K        | J 1/6W |
| RE43               | 24366102       | Res.Carbon       | 1K        | J 1/6W |
| RE44               | 24366103       | Res.Carbon       | 10K       | J 1/6W |

| LOCATION<br>NUMBER  | PART<br>NUMBER | DESCRIPTION            |              |        |
|---------------------|----------------|------------------------|--------------|--------|
| RE45                | 24366103       | Res.Carbon             | 10K          | J 1/6W |
| RE46                | 24366682       | Res.Carbon             | 6. 8K        | J 1/6W |
| RE47                | 24366105       | Res.Carbon             | 1M           | J 1/6W |
| RE48                | 24366301       | Res.Carbon             | 300          | J 1/6W |
| RE49                | 24366301       | Res.Carbon             | 300          | J 1/6W |
| RE51                | 24066954       | Res.Variable           | 2K           |        |
| RE60                | 24366102       | Res.Carbon             | 1K           | J 1/6W |
| MISCELLANEOUS       |                |                        |              |        |
| XE01                | 23153847       | Resonator.4MHz.TCR1014 |              |        |
| XE02                | 23153819       | Crystal                |              |        |
| ZE01                | 24000773       | Resistor Block.6. 8Kx8 |              |        |
| ZE02                | 24000772       | Resistor Block.6. 8Kx9 |              |        |
| ZE03                | 23107742       | Filter.TEM1014         |              |        |
| ZE04                | 23107748       | Filter.TEM1008.3-470K  |              |        |
| ZE05                | 23107742       | Filter.TEM1014         |              |        |
| ZE06                | 23107748       | Filter.TEM1008.3-470K  |              |        |
| ZE07                | 23107742       | Filter.TEM1014         |              |        |
| UM06                | 70197157       | P C Board Assy.CAM SW  |              |        |
| US01                | 70197250       | P C Board Assy.PCM     |              |        |
| INTEGRATED CIRCUITS |                |                        |              |        |
| ICN01               | B0486000       | IC                     | TC74HC00P    |        |
| ICN02               | B0487538       | IC                     | TC74HC4538P  |        |
| ICN03               | B0486000       | IC                     | TC74HC00P    |        |
| ICN04               | B0485600       | IC                     | TC74HC03P    |        |
| ICN05               | B0486161       | IC                     | TC74HC161P   |        |
| ICN06               | B0486157       | IC                     | TC74HC157P   |        |
| ICN07               | B0428735       | IC                     | TMM2015BP-15 |        |
| ICN08               | 70119687       | IC                     | TMS3475BNL   |        |
| ICN09               | 70119618       | IC                     | TGA8502P     |        |
| ICN10               | B0486002       | IC                     | TC74HC02P    |        |
| ICN11               | B0487538       | IC                     | TC74HC4538P  |        |
| ICN12               | B0487066       | IC                     | TC74HC4066P  |        |
| ICN13               | 70119689       | IC                     | AN1319       |        |
| ICN14               | 70119688       | IC                     | NJM353D      |        |
| ICS01               | 70119621       | IC                     | NJM2068S     |        |
| ICS02               | 70119621       | IC                     | NJM2068S     |        |
| ICS03               | B0272690       | IC                     | TD6704P      |        |
| ICS04               | B0272760       | IC                     | TD6709N      |        |
| ICS05               | 70119621       | IC                     | NJM2068S     |        |
| ICS06               | B0470522       | IC                     | TC4052BP     |        |
| ICS07               | 70119621       | IC                     | NJM2068S     |        |
| ICS08               | 70119659       | IC                     | MC10102P     |        |
| ICS09               | 70119660       | IC                     | MC10138P     |        |
| ICS10               | B0374990       | IC                     | TA79010P     |        |
| ICS11               | B0379640       | IC                     | TA79L009P    |        |
| ICS12               | B0374950       | IC                     | TA79005P     |        |
| ICS13               | B0376500       | IC                     | TA79L005P    |        |
| ICS14               | B0372560       | IC                     | TA78L005AP   |        |
| ICS21               | B0379640       | IC                     | TA79L009P    |        |
| TRANSISTORS         |                |                        |              |        |
| QN16                | A6332430       | Transistor             | 2SC2458-Y    |        |
| QN17                | A6012030       | Transistor             | RN2203       |        |
| QN18                | A6332430       | Transistor             | 2SC2458-Y    |        |
| QN19                | A6002040       | Transistor             | RN1204       |        |
| QN20                | A6002030       | Transistor             | RN1203       |        |
| QN21                | A6002040       | Transistor             | RN1204       |        |
| QN22                | A6002040       | Transistor             | RN1204       |        |
| QN25                | A6534040       | Transistor             | 2SA1015-Y    |        |
| QN26                | A6534040       | Transistor             | 2SA1015-Y    |        |
| QN27                | A6534040       | Transistor             | 2SA1015-Y    |        |
| QN28                | A6002040       | Transistor             | RN1204       |        |
| QN30                | A6332540       | Transistor             | 2SC2668-Y    |        |
| QN31                | A6332540       | Transistor             | 2SC2668-Y    |        |
| QN32                | A6534430       | Transistor             | 2SA1048-Y    |        |
| QN33                | A6332540       | Transistor             | 2SC2668-Y    |        |
| QN34                | A6332430       | Transistor             | 2SC2458-Y    |        |
| QN35                | A6534430       | Transistor             | 2SA1048-Y    |        |
| QN36                | A6332430       | Transistor             | 2SC2458-Y    |        |
| QN37                | A6332540       | Transistor             | 2SC2668-Y    |        |
| QN38                | A6332430       | Transistor             | 2SC2458-Y    |        |
| QN39                | A6002040       | Transistor             | RN1204       |        |
| QS15                | A6325540       | Transistor             | SC2236-Y     |        |
| QS16                | A6002040       | Transistor             | RN1204       |        |



| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION      |                |
|--------------------|----------------|------------------|----------------|
| QS17               | A6048370       | Transistor.FET   | 2SK30ATMGR     |
| QS18               | A6048370       | Transistor.FET   | 2SK30ATMGR     |
| QS19               | A6012030       | Transistor       | RN2203         |
| QS20               | A6012040       | Transistor       | RN2204         |
| DIODES             |                |                  |                |
| DN01               | A7151500       | Diode            | 1SS201         |
| DN03               | A7160570       | Diode            | 1SS176         |
| DS01               | A7160570       | Diode            | 1SS176         |
| DS02               | A7160570       | Diode            | 1SS176         |
| DS03               | A7160570       | Diode            | 1SS176         |
| DS04               | A7160570       | Diode            | 1SS176         |
| DS05               | A7160570       | Diode            | 1SS176         |
| DS06               | A7110017       | Diode.Zener      | 05Z 5. 6-V     |
| DS07               | A7160570       | Diode            | 1SS176         |
| DS08               | A7160570       | Diode            | 1SS176         |
| DS09               | A7160570       | Diode            | 1SS176         |
| COILS              |                |                  |                |
| LN01               | 23261984       | Coil.Choke       | HC3035         |
| LN02               | 23238703       | Coil.Peaking     | TRF4820AJ      |
| LN03               | 23261984       | Coil.Choke       | HC3035         |
| LN04               | 23261984       | Coil.Choke       | HC3035         |
| LN05               | 23261984       | Coil.Choke       | HC3035         |
| LN06               | 23261984       | Coil.Choke       | HC3035         |
| LN07               | 70103011       | Coil.Bead Core   | RH3506L 3      |
| LN08               | 23261984       | Coil.Choke       | HC3035         |
| LN09               | 23237972       | Coil.Peaking     | TRF4181AC      |
| LS01               | 23237805       | Coil.Peaking     | TRF4222AC      |
| LS02               | 23237805       | Coil.Peaking     | TRF4222AC      |
| LS03               | 23261984       | Coil.Choke       | HC3035         |
| LS05               | 23239843       | Coil.Peaking     | TRF4R22AJ      |
| CAPACITORS         |                |                  |                |
| CN01               | 24203330       | Cap.Electrolytic | 33MF M 16V     |
| CN02               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V  |
| CN03               | 24203101       | Cap.Electrolytic | 100MF M 16V    |
| CN05               | 24203101       | Cap.Electrolytic | 100MF M 16V    |
| CN06               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V  |
| CN07               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V  |
| CN08               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V  |
| CN09               | 24436220       | Cap.Ceramic      | 22PF J 50V     |
| CN10               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V  |
| CN11               | 24203101       | Cap.Electrolytic | 100MF M 16V    |
| CN12               | 24436331       | Cap.Ceramic      | 330PF J 50V    |
| CN13               | 24203220       | Cap.Electrolytic | 22MF M 16V     |
| CN14               | 24203220       | Cap.Electrolytic | 22MF M 16V     |
| CN15               | 24436820       | Cap.Ceramic      | 82PF J 50V     |
| CN16               | 24203220       | Cap.Electrolytic | 22MF M 16V     |
| CN17               | 24436471       | Cap.Ceramic      | 470PF J 50V    |
| CN18               | 24436470       | Cap.Ceramic      | 47PF J 50V     |
| CN19               | 24203100       | Cap.Electrolytic | 10MF M 16V     |
| CN20               | 24436221       | Cap.Ceramic      | 220PF J 50V    |
| CN21               | 24436560       | Cap.Ceramic      | 56PF J 50V     |
| CN22               | 24212102       | Cap.Ceramic      | 1000PF K 50V   |
| CN23               | 24203101       | Cap.Electrolytic | 100MF M 16V    |
| CN24               | 24436470       | Cap.Ceramic      | 47PF J 50V     |
| CN25               | 24436511       | Cap.Ceramic      | 510PF J 50V    |
| CN26               | 24436470       | Cap.Ceramic      | 47PF J 50V     |
| CN27               | 24203101       | Cap.Electrolytic | 100MF M 16V    |
| CN28               | 24538823       | Cap.Plastic      | 0. 082MF J 50V |
| CN29               | 24591332       | Cap.Plastic      | 3300PF J 50V   |
| CN30               | 24203101       | Cap.Electrolytic | 100MF M 16V    |
| CN31               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V  |
| CN32               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V  |
| CN33               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V  |
| CN34               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V  |
| CN35               | 24203101       | Cap.Electrolytic | 100MF M 16V    |
| CN36               | 24203101       | Cap.Electrolytic | 100MF M 16V    |
| CN37               | 24436560       | Cap.Ceramic      | 56PF J 50V     |
| CN38               | 24203220       | Cap.Electrolytic | 22MF M 16V     |
| CN39               | 24203101       | Cap.Electrolytic | 100MF M 16V    |
| CN40               | 24203470       | Cap.Electrolytic | 47MF M 16V     |
| CN41               | 24538104       | Cap.Plastic      | 0. 1MF J 50V   |
| CN42               | 24851104       | Cap.Ceramic      | 0. 1MF K 25V   |
| CN43               | 24436100       | Cap.Ceramic      | 10PF J 50V     |
| CS03               | 24598103       | Cap.Plastic      | 0. 01MF J 50V  |
| CS04               | 24598103       | Cap.Plastic      | 0. 01MF J 50V  |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION      |               |
|--------------------|----------------|------------------|---------------|
| CS05               | 24630919       | Cap.Electrolytic | 10MF M 50V    |
| CS06               | 24630919       | Cap.Electrolytic | 10MF M 50V    |
| CS07               | 24203220       | Cap.Electrolytic | 22MF M 16V    |
| CS08               | 24203220       | Cap.Electrolytic | 22MF M 16V    |
| CS09               | 24203220       | Cap.Electrolytic | 22MF M 16V    |
| CS10               | 24203220       | Cap.Electrolytic | 22MF M 16V    |
| CS11               | 24203101       | Cap.Electrolytic | 100MF M 16V   |
| CS12               | 24203101       | Cap.Electrolytic | 100MF M 16V   |
| CS13               | 24436100       | Cap.Ceramic      | 10PF J 50V    |
| CS14               | 24436100       | Cap.Ceramic      | 10PF J 50V    |
| CS15               | 24630912       | Cap.Electrolytic | 22MF M 25V    |
| CS16               | 24630912       | Cap.Electrolytic | 22MF M 25V    |
| CS17               | 24095728       | Cap.Plastic      | 1200PF A 125V |
| CS18               | 24095728       | Cap.Plastic      | 1200PF A 125V |
| CS19               | 24202330       | Cap.Electrolytic | 33MF M 10V    |
| CS20               | 24202330       | Cap.Electrolytic | 33MF M 10V    |
| CS21               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS22               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS23               | 70430221       | Cap.Electrolytic | 220MF M 6.3V  |
| CS24               | 70430221       | Cap.Electrolytic | 220MF M 6.3V  |
| CS25               | 24630910       | Cap.Electrolytic | 220MF M 16V   |
| CS26               | 24630910       | Cap.Electrolytic | 220MF M 16V   |
| CS27               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS28               | 24232472       | Cap.Ceramic      | 4700PF Z 50V  |
| CS30               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS31               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS32               | 24203100       | Cap.Electrolytic | 10MF M 16V    |
| CS33               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS34               | 70430221       | Cap.Electrolytic | 220MF M 6.3V  |
| CS35               | 70430221       | Cap.Electrolytic | 220MF M 6.3V  |
| CS36               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS37               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS38               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS39               | 24095726       | Cap.Plastic      | 2000PF A 125V |
| CS40               | 24095726       | Cap.Plastic      | 2000PF A 125V |
| CS41               | 24598202       | Cap.Plastic      | 2000PF J 50V  |
| CS42               | 24598202       | Cap.Plastic      | 2000PF J 50V  |
| CS43               | 70430221       | Cap.Electrolytic | 220MF M 6.3V  |
| CS44               | 70430221       | Cap.Electrolytic | 220MF M 6.3V  |
| CS45               | 24203101       | Cap.Electrolytic | 100MF M 16V   |
| CS46               | 24203101       | Cap.Electrolytic | 100MF M 16V   |
| CS47               | 24630919       | Cap.Electrolytic | 10MF M 50V    |
| CS48               | 24630919       | Cap.Electrolytic | 10MF M 50V    |
| CS49               | 24591392       | Cap.Plastic      | 3900PF J 50V  |
| CS60               | 24591392       | Cap.Plastic      | 3900PF J 50V  |
| CS61               | 24630919       | Cap.Electrolytic | 10MF M 50V    |
| CS62               | 24630919       | Cap.Electrolytic | 10MF M 50V    |
| CS63               | 24203101       | Cap.Electrolytic | 100MF M 16V   |
| CS64               | 24203101       | Cap.Electrolytic | 100MF M 16V   |
| CS65               | 24203101       | Cap.Electrolytic | 100MF M 16V   |
| CS66               | 24203101       | Cap.Electrolytic | 100MF M 16V   |
| CS67               | 24598202       | Cap.Plastic      | 2000PF J 50V  |
| CS68               | 24598202       | Cap.Plastic      | 2000PF J 50V  |
| CS69               | 24630919       | Cap.Electrolytic | 10MF M 50V    |
| CS70               | 24630919       | Cap.Electrolytic | 10MF M 50V    |
| CS71               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS72               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS73               | 24203100       | Cap.Electrolytic | 10MF M 16V    |
| CS74               | 24203100       | Cap.Electrolytic | 10MF M 16V    |
| CS75               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS76               | 24474103       | Cap.Ceramic      | 0. 01MF N 50V |
| CS77               | 24538104       | Cap.Plastic      | 0. 1MF J 50V  |
| CS78               | 24630948       | Cap.Electrolytic | 10MF M 16V    |
| CS80               | 24212102       | Cap.Ceramic      | 1000PF K 50V  |
| CS81               | 24353150       | Cap.Ceramic      | 15PF J 50V    |
| CS82               | 24538104       | Cap.Plastic      | 0. 1MF J 50V  |
| CS83               | 24538104       | Cap.Plastic      | 0. 1MF J 50V  |
| CS96               | 24436680       | Cap.Ceramic      | 68PF J 50V    |
| CS97               | 24436680       | Cap.Ceramic      | 68PF J 50V    |
| CS98               | 24436470       | Cap.Ceramic      | 47PF J 50V    |
| CS99               | 24436470       | Cap.Ceramic      | 47PF J 50V    |
| RESISTORS          |                |                  |               |
| RN01               | 24366473       | Res.Carbon       | 47K J 1/6W    |
| RN02               | 24366222       | Res.Carbon       | 2. 2K J 1/6W  |
| RN03               | 24366472       | Res.Carbon       | 4. 7K J 1/6W  |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION |       |        | LOCATION<br>NUMBER        | P A R T<br>NUMBER | DESCRIPTION            |       |        |
|--------------------|-------------------|-------------|-------|--------|---------------------------|-------------------|------------------------|-------|--------|
| RN04               | 24366882          | Res. Carbon | 6. 8K | J 1/6W | RS27                      | 24366103          | Res. Carbon            | 10K   | J 1/6W |
| RN05               | 24366622          | Res. Carbon | 6. 2K | J 1/6W | RS28                      | 24366103          | Res. Carbon            | 10K   | J 1/6W |
| RN06               | 24366752          | Res. Carbon | 7. 5K | J 1/6W | RS29                      | 24366301          | Res. Carbon            | 300   | J 1/6W |
| RN07               | 24366474          | Res. Carbon | 470K  | J 1/6W | RS30                      | 24366302          | Res. Carbon            | 3K    | J 1/6W |
| RN08               | 24366913          | Res. Carbon | 91K   | J 1/6W | RS31                      | 24367101          | Res. Carbon            | 100   | G 1/2W |
| RN09               | 24366472          | Res. Carbon | 4. 7K | J 1/6W | RS32                      | 24367622          | Res. Carbon            | 6. 2K | G 1/6W |
| RN11               | 24366102          | Res. Carbon | 1K    | J 1/6W | RS33                      | 24327222          | Res. Metal             | 2. 2K | F 1/4W |
| RN12               | 24366472          | Res. Carbon | 4. 7K | J 1/6W | RS34                      | 24003894          | Res. Metal             | 6. 2K | J 1/4W |
| RN13               | 24366911          | Res. Carbon | 910   | G 1/6W | RS35                      | 24366104          | Res. Carbon            | 100K  | J 1/6W |
| RN14               | 24366132          | Res. Carbon | 1. 3K | J 1/6W | RS37                      | 24366101          | Res. Carbon            | 100   | J 1/6W |
| RN15               | 24366431          | Res. Carbon | 430   | J 1/6W | RS38                      | 24366471          | Res. Carbon            | 470   | J 1/6W |
| RN16               | 24366181          | Res. Carbon | 180   | J 1/6W | RS39                      | 24366102          | Res. Carbon            | 1K    | J 1/6W |
| RN17               | 24366751          | Res. Carbon | 750   | J 1/6W | RS40                      | 24327153          | Res. Metal             | 15K   | F 1/4W |
| RN18               | 24366132          | Res. Carbon | 1. 3K | J 1/6W | RS41                      | 24366273          | Res. Carbon            | 27K   | J 1/6W |
| RN19               | 24366221          | Res. Carbon | 220   | J 1/6W | RS42                      | 24366273          | Res. Carbon            | 27K   | J 1/6W |
| RN20               | 24366472          | Res. Carbon | 4. 7K | J 1/6W | RS43                      | 24367473          | Res. Carbon            | 47K   | G 1/6W |
| RN23               | 24366101          | Res. Carbon | 100   | J 1/6W | RS44                      | 24367473          | Res. Carbon            | 47K   | G 1/6W |
| RN24               | 24366102          | Res. Carbon | 1K    | J 1/6W | RS45                      | 24367623          | Res. Carbon            | 62K   | G 1/6W |
| RN25               | 24366182          | Res. Carbon | 1. 8K | J 1/6W | RS46                      | 24367623          | Res. Carbon            | 62K   | G 1/6W |
| RN26               | 24366221          | Res. Carbon | 220   | J 1/6W | RS47                      | 24367182          | Res. Carbon            | 1. 8K | G 1/6W |
| RN27               | 24366562          | Res. Carbon | 5. 6K | J 1/6W | RS48                      | 24367182          | Res. Carbon            | 1. 8K | G 1/6W |
| RN28               | 24366361          | Res. Carbon | 360   | J 1/6W | RS49                      | 24367102          | Res. Carbon            | 1K    | G 1/6W |
| RN31               | 24366473          | Res. Carbon | 47K   | J 1/6W | RS51                      | 24066878          | Res. Variable          | 2K    |        |
| RN32               | 24366222          | Res. Carbon | 2. 2K | J 1/6W | RS52                      | 24066878          | Res. Variable          | 2K    |        |
| RN33               | 24366153          | Res. Carbon | 15K   | J 1/6W | RS53                      | 24066878          | Res. Variable          | 2K    |        |
| RN34               | 24366182          | Res. Carbon | 1. 8K | J 1/6W | RS60                      | 24367102          | Res. Carbon            | 1K    | G 1/6W |
| RN35               | 24366132          | Res. Carbon | 1. 3K | J 1/6W | RS61                      | 24366104          | Res. Carbon            | 100K  | J 1/6W |
| RN36               | 24366223          | Res. Carbon | 22K   | J 1/6W | RS62                      | 24366104          | Res. Carbon            | 100K  | J 1/6W |
| RN37               | 24366473          | Res. Carbon | 47K   | J 1/6W | RS63                      | 24367562          | Res. Carbon            | 5. 6K | G 1/6W |
| RN38               | 24366472          | Res. Carbon | 4. 7K | J 1/6W | RS64                      | 24367562          | Res. Carbon            | 5. 6K | G 1/6W |
| RN39               | 24366222          | Res. Carbon | 2. 2K | J 1/6W | RS65                      | 24367223          | Res. Carbon            | 22K   | G 1/6W |
| RN40               | 24366104          | Res. Carbon | 100K  | J 1/6W | RS66                      | 24367223          | Res. Carbon            | 22K   | G 1/6W |
| RN41               | 24366563          | Res. Carbon | 56K   | J 1/6W | RS67                      | 24366302          | Res. Carbon            | 3K    | J 1/6W |
| RN42               | 24366223          | Res. Carbon | 22K   | J 1/6W | RS68                      | 24366302          | Res. Carbon            | 3K    | J 1/6W |
| RN43               | 24366102          | Res. Carbon | 1K    | J 1/6W | RS69                      | 24366471          | Res. Carbon            | 470   | J 1/6W |
| RN44               | 24366103          | Res. Carbon | 10K   | J 1/6W | RS70                      | 24366471          | Res. Carbon            | 470   | J 1/6W |
| RN45               | 24366102          | Res. Carbon | 1K    | J 1/6W | RS71                      | 24366105          | Res. Carbon            | 1M    | J 1/6W |
| RN46               | 24366103          | Res. Carbon | 10K   | J 1/6W | RS72                      | 24366105          | Res. Carbon            | 1M    | J 1/6W |
| RN47               | 24366102          | Res. Carbon | 1K    | J 1/6W | RS73                      | 24366103          | Res. Carbon            | 10K   | J 1/6W |
| RN48               | 24366102          | Res. Carbon | 1K    | J 1/6W | RS74                      | 24366223          | Res. Carbon            | 22K   | J 1/6W |
| RN49               | 24366102          | Res. Carbon | 1K    | J 1/6W | RS75                      | 24366103          | Res. Carbon            | 10K   | J 1/6W |
| RN60               | 24366163          | Res. Carbon | 16K   | J 1/6W | RS76                      | 24366103          | Res. Carbon            | 10K   | J 1/6W |
| RN61               | 24366822          | Res. Carbon | 8. 2K | J 1/6W | RS77                      | 24366102          | Res. Carbon            | 1K    | J 1/6W |
| RN62               | 24366103          | Res. Carbon | 10K   | J 1/6W | RS81                      | 24553330          | Res. Oxide, Metal      | 33    | J 1W   |
| RN63               | 24366103          | Res. Carbon | 10K   | J 1/6W | RS82                      | 24366102          | Res. Carbon            | 1K    | J 1/6W |
| RN64               | 24366102          | Res. Carbon | 1K    | J 1/6W | RS83                      | 24366102          | Res. Carbon            | 1K    | J 1/6W |
| RN67               | 24366101          | Res. Carbon | 100   | J 1/6W | RS84                      | 24366102          | Res. Carbon            | 1K    | J 1/6W |
| RN68               | 24366101          | Res. Carbon | 100   | J 1/6W | RS85                      | 24366102          | Res. Carbon            | 1K    | J 1/6W |
| RN69               | 24366562          | Res. Carbon | 5. 6K | J 1/6W | RS86                      | 24366102          | Res. Carbon            | 1K    | J 1/6W |
| RN70               | 24366272          | Res. Carbon | 2. 7K | J 1/6W | RS87                      | 24366102          | Res. Carbon            | 1K    | J 1/6W |
| RN71               | 24366472          | Res. Carbon | 4. 7K | J 1/6W | RS88                      | 24366102          | Res. Carbon            | 1K    | J 1/6W |
| RS01               | 24366472          | Res. Carbon | 4. 7K | J 1/6W | M I S C E L L A N E O U S |                   |                        |       |        |
| RS02               | 24366472          | Res. Carbon | 4. 7K | J 1/6W | UN21A                     | 70391048          | Screw, 3x6mm           |       |        |
| RS03               | 24367183          | Res. Carbon | 18K   | G 1/6W | VN01A                     | 23772306          | Screw, 3x0. 5x6mm      |       |        |
| RS04               | 24367183          | Res. Carbon | 18K   | G 1/6W | VN01B                     | 23772306          | Screw, 3x0. 5x6mm      |       |        |
| RS05               | 24367152          | Res. Carbon | 1. 5K | G 1/6W | VN02                      | 70851566          | Shield Cover           |       |        |
| RS06               | 24367152          | Res. Carbon | 1. 5K | G 1/6W | VN03                      | 70851567          | Shield Cover           |       |        |
| RS07               | 24367432          | Res. Carbon | 4. 3K | G 1/6W | VN07                      | 70852296          | Insulator              |       |        |
| RS08               | 24367432          | Res. Carbon | 4. 3K | G 1/6W | WS01                      | 70160683          | Wire                   |       |        |
| RS11               | 24366104          | Res. Carbon | 100K  | J 1/6W | XS01                      | 23153796          | Crystal                |       |        |
| RS12               | 24366104          | Res. Carbon | 100K  | J 1/6W | ZN01                      | 23107745          | Filter, TEM1011.3-271K |       |        |
| RS13               | 24366102          | Res. Carbon | 1K    | J 1/6W | ZN03                      | 23107745          | Filter, TEM1011.3-271K |       |        |
| RS14               | 24366102          | Res. Carbon | 1K    | J 1/6W | ZN04                      | 23107745          | Filter, TEM1011.3-271K |       |        |
| RS15               | 24366474          | Res. Carbon | 470K  | J 1/6W | ZN05                      | 23107748          | Filter, TEM1008.3-470K |       |        |
| RS16               | 24366474          | Res. Carbon | 470K  | J 1/6W | ZN06                      | 23107745          | Filter, TEM1011.3-271K |       |        |
| RS17               | 24367222          | Res. Carbon | 2. 2K | G 1/6W | ZN07                      | 23107748          | Filter, TEM1008.3-470K |       |        |
| RS18               | 24367222          | Res. Carbon | 2. 2K | G 1/6W | ZN08                      | 23107748          | Filter, TEM1008.3-470K |       |        |
| RS19               | 24367103          | Res. Carbon | 10K   | G 1/6W | ZN09                      | 23107745          | Filter, TEM1011.3-271K |       |        |
| RS20               | 24367103          | Res. Carbon | 10K   | G 1/6W | ZN10                      | 23107745          | Filter, TEM1011.3-271K |       |        |
| RS21               | 24366222          | Res. Carbon | 2. 2K | J 1/6W | ZN11                      | 23107741          | Filter, TEM1015.3-223N |       |        |
| RS22               | 24366222          | Res. Carbon | 2. 2K | J 1/6W | ZN12                      | 23107741          | Filter, TEM1015.3-223N |       |        |
| RS23               | 24366103          | Res. Carbon | 10K   | J 1/6W | ZN13                      | 23107745          | Filter, TEM1011.3-271K |       |        |
| RS24               | 24366103          | Res. Carbon | 10K   | J 1/6W | ZN14                      | 23107741          | Filter, TEM1015.3-223N |       |        |
| RS25               | 24366103          | Res. Carbon | 10K   | J 1/6W | ZN15                      | 23107741          | Filter, TEM1015.3-223N |       |        |
| RS26               | 24366103          | Res. Carbon | 10K   | J 1/6W | ZN16                      | 23107741          | Filter, TEM1015.3-223N |       |        |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION           |
|--------------------|-------------------|-----------------------|
| ZN17               | 23107741          | Filter,TEM1015.3-223N |
| ZS01               | 23119530          | IC,Hybrid             |
| ZS02               | 23119530          | IC,Hybrid             |
| ZS03               | 23107748          | Filter,TEM1008.3-470K |
| ZS04               | 23107748          | Filter,TEM1008.3-470K |
| ZS05               | 23107748          | Filter,TEM1008.3-470K |
| ZS06               | 23107748          | Filter,TEM1008.3-470K |
| ZS07               | 23107741          | Filter,TEM1015.3-223N |
| ZS08               | 23107741          | Filter,TEM1015.3-223N |
| ZS10               | 23107741          | Filter,TEM1015.3-223N |
| ZS11               | 23107741          | Filter,TEM1015.3-223N |

#### UU01 70197259 P C Board Assy.Memory Control

#### INTEGRATED CIRCUITS

|       |          |    |              |
|-------|----------|----|--------------|
| ICU01 | B0640960 | IC | 17G022AF0118 |
| ICU02 | B0635946 | IC | 17G014AF0109 |
| ICU03 | 23119315 | IC | MB40776      |
| ICU04 | 23119457 | IC | MB40576      |
| ICU05 | B0430058 | IC | TMM4164AP-12 |
| ICU06 | B0430058 | IC | TMM4164AP-12 |
| ICU07 | B0430281 | IC | TMM41464P-12 |
| ICU08 | B0430281 | IC | TMM41464P-12 |
| ICU09 | B0430281 | IC | TMM41464P-12 |
| ICU10 | B0430281 | IC | TMM41464P-12 |
| ICU11 | B0475382 | IC | TC4538BP     |
| ICU12 | B0325390 | IC | TA7347P      |
| ICU13 | B0325390 | IC | TA7347P      |
| ICU14 | B0325390 | IC | TA7347P      |
| ICU15 | B0324950 | IC | TA7320P      |
| ICU16 | B0324950 | IC | TA7320P      |
| ICU17 | B0325660 | IC | TA7374P      |
| ICU87 | B0470116 | IC | TC4011BP     |
| ICU88 | 70119685 | IC | M50254P      |
| ICU89 | B0486074 | IC | TC74HC74P    |
| ICU90 | B0486074 | IC | TC74HC74P    |
| ICU91 | B0470532 | IC | TC4053BP     |
| ICW06 | B0486125 | IC | TC74HC125P   |

#### TRANSISTORS

|      |          |            |           |
|------|----------|------------|-----------|
| QU18 | A6534430 | Transistor | 2SA1048-Y |
| QU19 | A6534430 | Transistor | 2SA1048-Y |
| QU20 | A6332540 | Transistor | 2SC2668-Y |
| QU21 | A6332540 | Transistor | 2SC2458-Y |
| QU22 | A6332430 | Transistor | 2SC2458-Y |
| QU23 | A6332430 | Transistor | 2SC2458-Y |
| QU24 | A6332430 | Transistor | 2SC2458-Y |
| QU25 | A6332430 | Transistor | 2SC2458-Y |
| QU26 | A6332430 | Transistor | 2SC2458-Y |
| QU27 | A6332430 | Transistor | 2SC2458-Y |
| QU28 | A6332430 | Transistor | 2SC2458-Y |
| QU29 | A6332430 | Transistor | 2SC2458-Y |
| QU30 | A6534430 | Transistor | 2SA1048-Y |
| QU31 | A6534430 | Transistor | 2SA1048-Y |
| QU32 | A6332430 | Transistor | 2SC2458-Y |
| QU33 | A6332430 | Transistor | 2SC2458-Y |
| QU34 | A6332430 | Transistor | 2SC2458-Y |
| QU35 | A6002040 | Transistor | RN1204    |
| QU36 | A6534430 | Transistor | 2SA1048-Y |
| QU37 | A6534430 | Transistor | 2SA1048-Y |
| QU38 | A6534430 | Transistor | 2SA1048-Y |
| QU39 | A6002040 | Transistor | RN1204    |
| QU40 | A6534430 | Transistor | 2SA1048-Y |
| QU41 | A6534430 | Transistor | 2SA1048-Y |
| QU42 | A6534430 | Transistor | 2SA1048-Y |
| QU43 | A6332430 | Transistor | 2SC2458-Y |
| QU44 | A6332430 | Transistor | 2SC2458-Y |
| QU45 | A6332430 | Transistor | 2SC2458-Y |
| QU46 | A6332430 | Transistor | 2SC2458-Y |
| QU47 | A6332430 | Transistor | 2SC2458-Y |
| QU48 | A6002040 | Transistor | RN1204    |
| QU49 | A6534430 | Transistor | 2SA1048-Y |
| QU60 | A6534430 | Transistor | 2SA1048-Y |
| QU61 | A6332430 | Transistor | 2SC2458-Y |
| QU62 | A6332430 | Transistor | 2SC2458-Y |
| QU63 | A6332430 | Transistor | 2SC2458-Y |
| QU64 | A6332430 | Transistor | 2SC2458-Y |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION          |
|--------------------|-------------------|----------------------|
| QU65               | A6332430          | Transistor 2SC2458-Y |
| QU66               | A6534430          | Transistor 2SA1048-Y |
| QU67               | A6534430          | Transistor 2SA1048-Y |
| QU68               | A6534430          | Transistor 2SA1048-Y |
| QU69               | A6332430          | Transistor 2SC2458-Y |
| QU70               | A6332430          | Transistor 2SC2458-Y |
| QU71               | A6002040          | Transistor RN1204    |
| QU72               | A6332430          | Transistor 2SC2458-Y |
| QU73               | A6534430          | Transistor 2SA1048-Y |
| QU74               | A6332430          | Transistor 2SC2458-Y |
| QU75               | A6332430          | Transistor 2SC2458-Y |
| QU76               | A6534430          | Transistor 2SA1048-Y |
| QU77               | A6002040          | Transistor RN1204    |
| QU78               | A6002040          | Transistor RN1204    |
| QU79               | A6332430          | Transistor 2SC2458-Y |
| QU80               | A6332430          | Transistor 2SC2458-Y |
| QU81               | A6325540          | Transistor SC2236-Y  |
| QU83               | A6534430          | Transistor 2SA1048-Y |
| QU84               | A6534430          | Transistor 2SA1048-Y |
| QU85               | A6534430          | Transistor 2SA1048-Y |
| QU86               | A6332430          | Transistor 2SC2458-Y |
| QU92               | A6002040          | Transistor RN1204    |
| QU93               | A6002040          | Transistor RN1204    |
| QU94               | A6332430          | Transistor 2SC2458-Y |
| QU95               | A6332430          | Transistor 2SC2458-Y |
| QU96               | A6534430          | Transistor 2SA1048-Y |
| QU97               | A6332430          | Transistor 2SC2458-Y |
| QU98               | A6332430          | Transistor 2SC2458-Y |
| QU99               | A6012040          | Transistor RN2204    |
| QW01               | A6332430          | Transistor 2SC2458-Y |
| QW02               | A6534430          | Transistor 2SA1048-Y |
| QW03               | A6332430          | Transistor 2SC2458-Y |

#### DIODES

|      |          |       |        |
|------|----------|-------|--------|
| DU01 | A7160570 | Diode | 1SS176 |
| DU02 | A7160570 | Diode | 1SS176 |
| DU03 | A7160570 | Diode | 1SS176 |
| DU04 | A7160570 | Diode | 1SS176 |
| DU05 | A7160570 | Diode | 1SS176 |
| DU06 | A7160570 | Diode | 1SS176 |
| DU07 | A7160570 | Diode | 1SS176 |
| DU08 | A7151450 | Diode | 1SS200 |
| DU10 | A7160570 | Diode | 1SS176 |
| DU11 | A7160570 | Diode | 1SS176 |
| DU12 | A7160570 | Diode | 1SS176 |
| DU13 | A7151450 | Diode | 1SS200 |
| DU14 | A7151450 | Diode | 1SS200 |
| DU15 | A7160570 | Diode | 1SS176 |
| DU16 | A7160570 | Diode | 1SS176 |
| DU19 | A7160570 | Diode | 1SS176 |
| DU20 | A7160570 | Diode | 1SS176 |
| DU21 | A7160570 | Diode | 1SS176 |
| DU22 | A7160570 | Diode | 1SS176 |
| DU23 | A7160570 | Diode | 1SS176 |
| DU24 | A7160570 | Diode | 1SS176 |
| DU25 | A7160570 | Diode | 1SS176 |
| DU26 | A7160570 | Diode | 1SS176 |

#### COILS

|      |          |                |            |
|------|----------|----------------|------------|
| LU01 | 70103011 | Coil,Bead Core | RH35061. 3 |
| LU02 | 23261984 | Coil,Choke     | HC3035     |
| LU03 | 70103011 | Coil,Bead Core | RH35061. 3 |
| LU04 | 23238718 | Coil,Peaking   | TRF4479AJ  |
| LU05 | 23238718 | Coil,Peaking   | TRF4479AJ  |
| LU06 | 23239843 | Coil,Peaking   | TRF4R22AJ  |
| LU08 | 23239831 | Coil,Peaking   | TRF4229AJ  |
| LU09 | 23238703 | Coil,Peaking   | TRF4820AJ  |
| LU10 | 23237976 | Coil,Peaking   | TRF4820AC  |
| LU11 | 23238705 | Coil,Peaking   | TRF4560AJ  |
| LU12 | 23238705 | Coil,Peaking   | TRF4560AJ  |
| LU13 | 23237974 | Coil,Peaking   | TRF4121AC  |
| LU14 | 23237971 | Coil,Peaking   | TRF4221AC  |
| LU15 | 23237974 | Coil,Peaking   | TRF4121AC  |
| LU16 | 23238702 | Coil,Peaking   | TRF4101AC  |
| LU17 | 23238702 | Coil,Peaking   | TRF4101AC  |
| LU18 | 23238705 | Coil,Peaking   | TRF4560AJ  |
| LU19 | 23237981 | Coil,Peaking   | TRF4330AC  |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION |  |
|--------------------|-------------------|-------------|--|
|--------------------|-------------------|-------------|--|

|      |          |              |           |
|------|----------|--------------|-----------|
| LU20 | 23237978 | Coil.Peaking | TRF4580AC |
| LU21 | 23237983 | Coil.Peaking | TRF4220AC |
| LU22 | 23237970 | Coil.Peaking | TRF4271AC |
| LU23 | 23237989 | Coil.Peaking | TRF4689AC |
| LU24 | 23237977 | Coil.Peaking | TRF4680AC |
| LU25 | 23237973 | Coil.Peaking | TRF4151AC |
| LU26 | 23237978 | Coil.Peaking | TRF4580AC |
| LU31 | 23238703 | Coil.Peaking | TRF4820AJ |
| LU32 | 23239835 | Coil.Peaking | TRF4109AJ |
| LU33 | 23238714 | Coil.Peaking | TRF4100AJ |

#### CAPACITORS

|      |          |                  |          |       |
|------|----------|------------------|----------|-------|
| CU01 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU02 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU03 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU04 | 24203220 | Cap.Electrolytic | 22MF     | M 16V |
| CU05 | 24202470 | Cap.Electrolytic | 47MF     | M 10V |
| CU07 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU08 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU09 | 24353820 | Cap.Ceramic      | 82PF     | J 50V |
| CU10 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU11 | 24538104 | Cap.Plastic      | 0. 1MF   | J 50V |
| CU12 | 24538333 | Cap.Plastic      | 0. 033MF | J 50V |
| CU13 | 24591472 | Cap.Plastic      | 4700PF   | J 50V |
| CU14 | 24206478 | Cap.Electrolytic | 0. 47MF  | M 50V |
| CU15 | 24473470 | Cap.Ceramic      | 47PF     | J 50V |
| CU16 | 24591102 | Cap.Plastic      | 1000PF   | J 50V |
| CU17 | 24591102 | Cap.Plastic      | 1000PF   | J 50V |
| CU18 | 24538333 | Cap.Plastic      | 0. 033MF | J 50V |
| CU19 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU20 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU21 | 24202470 | Cap.Electrolytic | 47MF     | M 10V |
| CU22 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU24 | 24202220 | Cap.Electrolytic | 22MF     | M 10V |
| CU25 | 24473220 | Cap.Ceramic      | 22PF     | J 50V |
| CU26 | 24436820 | Cap.Ceramic      | 82PF     | J 50V |
| CU27 | 24473220 | Cap.Ceramic      | 22PF     | J 50V |
| CU29 | 24473470 | Cap.Ceramic      | 47PF     | J 50V |
| CU30 | 24436201 | Cap.Ceramic      | 200PF    | J 50V |
| CU31 | 24436201 | Cap.Ceramic      | 200PF    | J 50V |
| CU32 | 24473470 | Cap.Ceramic      | 47PF     | J 50V |
| CU33 | 24436241 | Cap.Ceramic      | 240PF    | J 50V |
| CU34 | 24436271 | Cap.Ceramic      | 270PF    | J 50V |
| CU35 | 24202470 | Cap.Electrolytic | 47MF     | M 10V |
| CU36 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU37 | 24203330 | Cap.Electrolytic | 33MF     | M 16V |
| CU38 | 24203100 | Cap.Electrolytic | 10MF     | M 16V |
| CU39 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU40 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU41 | 24474151 | Cap.Ceramic      | 150PF    | K 50V |
| CU42 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU43 | 24473150 | Cap.Ceramic      | 15PF     | J 50V |
| CU44 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU45 | 24203100 | Cap.Electrolytic | 10MF     | M 16V |
| CU46 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU47 | 24203100 | Cap.Electrolytic | 10MF     | M 16V |
| CU48 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU49 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU60 | 24203100 | Cap.Electrolytic | 10MF     | M 16V |
| CU61 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU62 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU63 | 24473430 | Cap.Ceramic      | 43PF     | J 50V |
| CU64 | 24473330 | Cap.Ceramic      | 33PF     | J 50V |
| CU65 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU66 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU67 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU68 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU69 | 24436361 | Cap.Ceramic      | 360PF    | J 50V |
| CU70 | 24473270 | Cap.Ceramic      | 27PF     | J 50V |
| CU71 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU72 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU73 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU74 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU75 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU76 | 24474103 | Cap.Ceramic      | 0. 01MF  | N 50V |
| CU77 | 24436820 | Cap.Ceramic      | 82PF     | J 50V |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION |  |
|--------------------|-------------------|-------------|--|
|--------------------|-------------------|-------------|--|

|      |          |                  |         |       |
|------|----------|------------------|---------|-------|
| CU78 | 24436181 | Cap.Ceramic      | 180PF   | J 50V |
| CU80 | 24436121 | Cap.Ceramic      | 120PF   | J 50V |
| CU81 | 24473100 | Cap.Ceramic      | 10PF    | J 50V |
| CU82 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU83 | 24591102 | Cap.Plastic      | 1000PF  | J 50V |
| CU84 | 24206229 | Cap.Electrolytic | 2. 2MF  | M 50V |
| CU85 | 24353050 | Cap.Ceramic      | 5PF     | C 50V |
| CU86 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU87 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU88 | 24203100 | Cap.Electrolytic | 10MF    | M 16V |
| CU89 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU90 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU91 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU92 | 24206229 | Cap.Electrolytic | 2. 2MF  | M 50V |
| CU93 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU94 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU95 | 24630949 | Cap.Electrolytic | 47MF    | M 10V |
| CU96 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU97 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CU98 | 24630949 | Cap.Electrolytic | 47MF    | M 10V |
| CU99 | 24436101 | Cap.Ceramic      | 100PF   | J 50V |
| CW01 | 24202470 | Cap.Electrolytic | 47MF    | M 10V |
| CW02 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW03 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW04 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW05 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW06 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW07 | 24630949 | Cap.Electrolytic | 47MF    | M 10V |
| CW08 | 24538104 | Cap.Plastic      | 0. 1MF  | J 50V |
| CW09 | 24538104 | Cap.Plastic      | 0. 1MF  | J 50V |
| CW10 | 24538104 | Cap.Plastic      | 0. 1MF  | J 50V |
| CW11 | 24538104 | Cap.Plastic      | 0. 1MF  | J 50V |
| CW12 | 24538104 | Cap.Plastic      | 0. 1MF  | J 50V |
| CW13 | 24538104 | Cap.Plastic      | 0. 1MF  | J 50V |
| CW14 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW15 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW16 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW17 | 24630949 | Cap.Electrolytic | 47MF    | M 10V |
| CW18 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW19 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW20 | 24473560 | Cap.Ceramic      | 56PF    | J 50V |
| CW21 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW22 | 24474101 | Cap.Ceramic      | 100PF   | K 50V |
| CW23 | 24474101 | Cap.Ceramic      | 100PF   | K 50V |
| CW24 | 24474101 | Cap.Ceramic      | 100PF   | K 50V |
| CW25 | 24474101 | Cap.Ceramic      | 100PF   | K 50V |
| CW26 | 24474101 | Cap.Ceramic      | 100PF   | K 50V |
| CW28 | 24205339 | Cap.Electrolytic | 3. 3MF  | M 35V |
| CW29 | 24436101 | Cap.Ceramic      | 100PF   | J 50V |
| CW30 | 24212102 | Cap.Ceramic      | 1000PF  | K 50V |
| CW31 | 24538104 | Cap.Plastic      | 0. 1MF  | J 50V |
| CW32 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW33 | 24473470 | Cap.Ceramic      | 47PF    | J 50V |
| CW34 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW35 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW36 | 24473390 | Cap.Ceramic      | 39PF    | J 50V |
| CW37 | 24232103 | Cap.Ceramic      | 0. 01MF | Z 50V |
| CW38 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW39 | 24473100 | Cap.Ceramic      | 10PF    | J 50V |
| CW40 | 24474103 | Cap.Ceramic      | 0. 01MF | N 50V |
| CW41 | 24203220 | Cap.Electrolytic | 22MF    | M 16V |
| CW42 | 24203100 | Cap.Electrolytic | 10MF    | M 16V |
| CW43 | 24436220 | Cap.Ceramic      | 22PF    | J 50V |
| CW44 | 24436121 | Cap.Ceramic      | 120PF   | J 50V |
| CW45 | 24232103 | Cap.Ceramic      | 0. 01MF | Z 50V |
| CW46 | 24538274 | Cap.Plastic      | 0. 27MF | J 50V |
| CW47 | 24232103 | Cap.Ceramic      | 0. 01MF | Z 50V |
| CW48 | 24232103 | Cap.Ceramic      | 0. 01MF | Z 50V |
| CW49 | 24436101 | Cap.Ceramic      | 100PF   | J 50V |

#### R E S I S T O R S

|      |          |            |      |        |
|------|----------|------------|------|--------|
| RU01 | 24366434 | Res.Carbon | 430K | J 1/6W |
| RU02 | 24366750 | Res.Carbon | 75   | J 1/6W |
| RU03 | 24366153 | Res.Carbon | 15K  | J 1/6W |
| RU04 | 24366331 | Res.Carbon | 330  | J 1/6W |
| RU05 | 24366201 | Res.Carbon | 200  | J 1/6W |



| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION   |       |        |  |
|--------------------|-------------------|---------------|-------|--------|--|
| RU06               | 24366391          | Res. Carbon   | 390   | J 1/6W |  |
| RU07               | 24366391          | Res. Carbon   | 390   | J 1/6W |  |
| RU08               | 24366101          | Res. Carbon   | 100   | J 1/6W |  |
| RU09               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU10               | 24366101          | Res. Carbon   | 100   | J 1/6W |  |
| RU11               | 24366472          | Res. Carbon   | 4. 7K | J 1/6W |  |
| RU12               | 24366822          | Res. Carbon   | 8. 2K | J 1/6W |  |
| RU13               | 24366473          | Res. Carbon   | 47K   | J 1/6W |  |
| RU14               | 24366272          | Res. Carbon   | 2. 7K | J 1/6W |  |
| RU15               | 24366683          | Res. Carbon   | 68K   | J 1/6W |  |
| RU16               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| RU17               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU18               | 24366682          | Res. Carbon   | 6. 8K | J 1/6W |  |
| RU19               | 24366113          | Res. Carbon   | 11K   | J 1/6W |  |
| RU20               | 24366471          | Res. Carbon   | 470   | J 1/6W |  |
| RU21               | 24366273          | Res. Carbon   | 27K   | J 1/6W |  |
| RU22               | 24366333          | Res. Carbon   | 33K   | J 1/6W |  |
| RU23               | 24366433          | Res. Carbon   | 43K   | J 1/6W |  |
| RU24               | 24366223          | Res. Carbon   | 22K   | J 1/6W |  |
| RU25               | 24366473          | Res. Carbon   | 47K   | J 1/6W |  |
| RU26               | 24366103          | Res. Carbon   | 10K   | J 1/6W |  |
| RU27               | 24366152          | Res. Carbon   | 1. 5K | J 1/6W |  |
| RU28               | 24366223          | Res. Carbon   | 22K   | J 1/6W |  |
| RU29               | 24366433          | Res. Carbon   | 43K   | J 1/6W |  |
| RU30               | 24366433          | Res. Carbon   | 43K   | J 1/6W |  |
| RU31               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU32               | 24366910          | Res. Carbon   | 91    | J 1/6W |  |
| RU33               | 24366432          | Res. Carbon   | 4. 3K | J 1/6W |  |
| RU34               | 24366221          | Res. Carbon   | 220   | J 1/6W |  |
| RU35               | 24366123          | Res. Carbon   | 12K   | J 1/6W |  |
| RU36               | 24366361          | Res. Carbon   | 360   | J 1/6W |  |
| RU37               | 24366473          | Res. Carbon   | 47K   | J 1/6W |  |
| RU38               | 24366333          | Res. Carbon   | 33K   | J 1/6W |  |
| RU39               | 24366470          | Res. Carbon   | 47    | J 1/6W |  |
| RU40               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU41               | 24366153          | Res. Carbon   | 15K   | J 1/6W |  |
| RU42               | 24366911          | Res. Carbon   | 910   | G 1/6W |  |
| RU43               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU44               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU45               | 24366223          | Res. Carbon   | 22K   | J 1/6W |  |
| RU46               | 24366224          | Res. Carbon   | 220K  | J 1/6W |  |
| RU47               | 24366112          | Res. Carbon   | 1. 1K | J 1/6W |  |
| RU48               | 24366222          | Res. Carbon   | 2. 2K | J 1/6W |  |
| RU49               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU51               | 24066954          | Res. Variable | 2K    |        |  |
| RU52               | 24066956          | Res. Variable | 500   |        |  |
| RU53               | 24066983          | Res. Variable | 5K    |        |  |
| RU54               | 24066983          | Res. Variable | 5K    |        |  |
| RU60               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU61               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU62               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU63               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU64               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU65               | 24366473          | Res. Carbon   | 47K   | J 1/6W |  |
| RU66               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU67               | 24366751          | Res. Carbon   | 750   | J 1/6W |  |
| RU68               | 24366123          | Res. Carbon   | 12K   | J 1/6W |  |
| RU69               | 24366682          | Res. Carbon   | 6. 8K | J 1/6W |  |
| RU70               | 24366202          | Res. Carbon   | 2K    | J 1/6W |  |
| RU71               | 24366222          | Res. Carbon   | 2. 2K | J 1/6W |  |
| RU72               | 24366682          | Res. Carbon   | 6. 8K | J 1/6W |  |
| RU73               | 24366683          | Res. Carbon   | 68K   | J 1/6W |  |
| RU74               | 24366333          | Res. Carbon   | 33K   | J 1/6W |  |
| RU75               | 24366102          | Res. Carbon   | 1K    | J 1/6W |  |
| RU76               | 24366754          | Res. Carbon   | 750K  | J 1/6W |  |
| RU77               | 24367112          | Res. Carbon   | 1. 1K | G 1/6W |  |
| RU78               | 24367432          | Res. Carbon   | 4. 3K | G 1/6W |  |
| RU79               | 24366471          | Res. Carbon   | 470   | J 1/6W |  |
| RU80               | 24366223          | Res. Carbon   | 22K   | J 1/6W |  |
| RU81               | 24366123          | Res. Carbon   | 12K   | J 1/6W |  |
| RU82               | 24366122          | Res. Carbon   | 1. 2K | J 1/6W |  |
| RU83               | 24366680          | Res. Carbon   | 68    | J 1/6W |  |
| RU84               | 24366122          | Res. Carbon   | 1. 2K | J 1/6W |  |
| RU85               | 24366122          | Res. Carbon   | 1. 2K | J 1/6W |  |
| RU86               | 24366182          | Res. Carbon   | 1. 8K | J 1/6W |  |

| LOCATION<br>NUMBER | P A R T<br>NUMBER | DESCRIPTION |       |        |  |
|--------------------|-------------------|-------------|-------|--------|--|
| RU87               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RU88               | 24366473          | Res. Carbon | 47K   | J 1/6W |  |
| RU89               | 24366561          | Res. Carbon | 560   | J 1/6W |  |
| RU90               | 24366472          | Res. Carbon | 4. 7K | J 1/6W |  |
| RU91               | 24366821          | Res. Carbon | 820   | J 1/6W |  |
| RU92               | 24366471          | Res. Carbon | 470   | J 1/6W |  |
| RU93               | 24366152          | Res. Carbon | 1. 5K | J 1/6W |  |
| RU94               | 24366152          | Res. Carbon | 1. 5K | J 1/6W |  |
| RU95               | 24366511          | Res. Carbon | 510   | J 1/6W |  |
| RU96               | 24366272          | Res. Carbon | 2. 7K | J 1/6W |  |
| RU97               | 24366102          | Res. Carbon | 1K    | J 1/6W |  |
| RU98               | 24366910          | Res. Carbon | 91    | J 1/6W |  |
| RU99               | 24366432          | Res. Carbon | 4. 3K | J 1/6W |  |
| RW01               | 24366221          | Res. Carbon | 220   | J 1/6W |  |
| RW02               | 24366123          | Res. Carbon | 12K   | J 1/6W |  |
| RW03               | 24366361          | Res. Carbon | 360   | J 1/6W |  |
| RW04               | 24366332          | Res. Carbon | 3. 3K | J 1/6W |  |
| RW05               | 24366101          | Res. Carbon | 100   | J 1/6W |  |
| RW09               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW10               | 24366154          | Res. Carbon | 150K  | J 1/6W |  |
| RW11               | 24366331          | Res. Carbon | 330   | J 1/6W |  |
| RW12               | 24366473          | Res. Carbon | 47K   | J 1/6W |  |
| RW13               | 24366472          | Res. Carbon | 4. 7K | J 1/6W |  |
| RW14               | 24366393          | Res. Carbon | 39K   | J 1/6W |  |
| RW15               | 24366103          | Res. Carbon | 10K   | J 1/6W |  |
| RW16               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW17               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW18               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW19               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW20               | 24366103          | Res. Carbon | 10K   | J 1/6W |  |
| RW21               | 24366104          | Res. Carbon | 100K  | J 1/6W |  |
| RW22               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW23               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW24               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW25               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW26               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW27               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW28               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW29               | 24366203          | Res. Carbon | 20K   | J 1/6W |  |
| RW30               | 24366822          | Res. Carbon | 8. 2K | J 1/6W |  |
| RW31               | 24366151          | Res. Carbon | 150   | J 1/6W |  |
| RW32               | 24366152          | Res. Carbon | 1. 5K | J 1/6W |  |
| RW33               | 24366152          | Res. Carbon | 1. 5K | J 1/6W |  |
| RW34               | 24366682          | Res. Carbon | 6. 8K | J 1/6W |  |
| RW35               | 24366182          | Res. Carbon | 1. 8K | J 1/6W |  |
| RW36               | 24366103          | Res. Carbon | 10K   | J 1/6W |  |
| RW37               | 24366821          | Res. Carbon | 820   | J 1/6W |  |
| RW38               | 24366473          | Res. Carbon | 47K   | J 1/6W |  |
| RW39               | 24366103          | Res. Carbon | 10K   | J 1/6W |  |
| RW40               | 24366102          | Res. Carbon | 1K    | J 1/6W |  |
| RW41               | 24366621          | Res. Carbon | 620   | J 1/6W |  |
| RW42               | 24366332          | Res. Carbon | 3. 3K | J 1/6W |  |
| RW43               | 24366562          | Res. Carbon | 5. 6K | J 1/6W |  |
| RW44               | 24366152          | Res. Carbon | 1. 5K | J 1/6W |  |
| RW45               | 24366561          | Res. Carbon | 560   | J 1/6W |  |
| RW46               | 24366332          | Res. Carbon | 3. 3K | J 1/6W |  |
| RW47               | 24366472          | Res. Carbon | 4. 7K | J 1/6W |  |
| RW48               | 24366244          | Res. Carbon | 240K  | J 1/6W |  |
| RW49               | 24366470          | Res. Carbon | 47    | J 1/6W |  |
| RW60               | 24366470          | Res. Carbon | 47    | J 1/6W |  |
| RW61               | 24366223          | Res. Carbon | 22K   | J 1/6W |  |
| RW62               | 24366102          | Res. Carbon | 1K    | J 1/6W |  |
| RW64               | 24366101          | Res. Carbon | 100   | J 1/6W |  |
| RW65               | 24366472          | Res. Carbon | 4. 7K | J 1/6W |  |
| RW66               | 24366471          | Res. Carbon | 470   | J 1/6W |  |
| RW67               | 24366471          | Res. Carbon | 470   | J 1/6W |  |
| RW68               | 24366272          | Res. Carbon | 2. 7K | J 1/6W |  |
| RW69               | 24366152          | Res. Carbon | 1. 5K | J 1/6W |  |
| RW70               | 24366103          | Res. Carbon | 10K   | J 1/6W |  |
| RW71               | 24366682          | Res. Carbon | 6. 8K | J 1/6W |  |
| RW72               | 24366682          | Res. Carbon | 6. 8K | J 1/6W |  |
| RW73               | 24366104          | Res. Carbon | 100K  | J 1/6W |  |
| RW74               | 24366104          | Res. Carbon | 100K  | J 1/6W |  |
| RW75               | 24366104          | Res. Carbon | 100K  | J 1/6W |  |
| RW76               | 24366333          | Res. Carbon | 33K   | J 1/6W |  |

| LOCATION<br>NUMBER                  | PART<br>NUMBER | DESCRIPTION                  |              |        |
|-------------------------------------|----------------|------------------------------|--------------|--------|
| RW77                                | 24366103       | Res.Carbon                   | 10K          | J 1/6W |
| RW78                                | 24366472       | Res.Carbon                   | 4. 7K        | J 1/6W |
| RW79                                | 24366272       | Res.Carbon                   | 2. 7K        | J 1/6W |
| RW80                                | 24366472       | Res.Carbon                   | 4. 7K        | J 1/6W |
| RW81                                | 24366102       | Res.Carbon                   | 1K           | J 1/6W |
| RW82                                | 24366102       | Res.Carbon                   | 1K           | J 1/6W |
| RW83                                | 24366682       | Res.Carbon                   | 6. 8K        | J 1/6W |
| RW84                                | 24366222       | Res.Carbon                   | 2. 2K        | J 1/6W |
| RW85                                | 24366101       | Res.Carbon                   | 100          | J 1/6W |
| RW86                                | 24366332       | Res.Carbon                   | 3. 3K        | J 1/6W |
| RW87                                | 24366152       | Res.Carbon                   | 1. 5K        | J 1/6W |
| RW88                                | 24366392       | Res.Carbon                   | 3. 9K        | J 1/6W |
| RW89                                | 24366222       | Res.Carbon                   | 2. 2K        | J 1/6W |
| RW90                                | 24366102       | Res.Carbon                   | 1K           | J 1/6W |
| RW91                                | 24366181       | Res.Carbon                   | 180          | J 1/6W |
| RW92                                | 24366102       | Res.Carbon                   | 1K           | J 1/6W |
| RW94                                | 24366102       | Res.Carbon                   | 1K           | J 1/6W |
| RW95                                | 24366472       | Res.Carbon                   | 4. 7K        | J 1/6W |
| RW96                                | 24366244       | Res.Carbon                   | 240K         | J 1/6W |
| RW97                                | 24366222       | Res.Carbon                   | 2. 2K        | J 1/6W |
| RW98                                | 24366102       | Res.Carbon                   | 1K           | J 1/6W |
| RW99                                | 24366222       | Res.Carbon                   | 2. 2K        | J 1/6W |
| RZ01                                | 24366102       | Res.Carbon                   | 1K           | J 1/6W |
| RZ02                                | 24366471       | Res.Carbon                   | 470          | J 1/6W |
| RZ03                                | 24366563       | Res.Carbon                   | 56K          | J 1/6W |
| RZ04                                | 24941275       | Res.Composition              | 2. 7M        | J 1/4W |
| RZ05                                | 24366470       | Res.Carbon                   | 47           | J 1/6W |
| RZ06                                | 24366470       | Res.Carbon                   | 47           | J 1/6W |
| RZ07                                | 24366470       | Res.Carbon                   | 47           | J 1/6W |
| RZ08                                | 24366470       | Res.Carbon                   | 47           | J 1/6W |
| M I S C E L L A N E O U S           |                |                              |              |        |
| ZU01                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU02                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU03                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU04                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU05                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU06                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU07                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU08                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU09                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU10                                | 23107742       | Filter.TEM1014               |              |        |
| ZU11                                | 23107742       | Filter.TEM1014               |              |        |
| ZU12                                | 23107742       | Filter.TEM1014               |              |        |
| ZU14                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU18                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU19                                | 23107742       | Filter.TEM1014               |              |        |
| ZU20                                | 23107742       | Filter.TEM1014               |              |        |
| ZU21                                | 23107742       | Filter.TEM1014               |              |        |
| ZU22                                | 23107742       | Filter.TEM1014               |              |        |
| ZU23                                | 23107742       | Filter.TEM1014               |              |        |
| ZU24                                | 24000700       | Resistor Block.1. 5Kx6       |              |        |
| ZU25                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| ZU26                                | 23107748       | Filter.TEM1008.3-470K        |              |        |
| UX01                                | 70197391       | P C Board Assy.Timer Display |              |        |
| I N T E G R A T E D C I R C U I T S |                |                              |              |        |
| ICG01                               | 70119622       | IC                           | BA6800AS     |        |
| ICR01                               | 23119566       | IC                           | UPC1474HA    |        |
| ICX01                               | 70119777       | IC                           | D75208CW-112 |        |
| T R A N S I S T O R S               |                |                              |              |        |
| QG02                                | A6012030       | Transistor                   | RN2203       |        |
| QG03                                | A6012030       | Transistor                   | RN2203       |        |
| QG04                                | A6332430       | Transistor                   | 2SC2458-Y    |        |
| QG05                                | A6002040       | Transistor                   | RN1204       |        |
| QX03                                | A6332430       | Transistor                   | 2SC2458-Y    |        |
| QX04                                | A6012010       | Transistor                   | RN2201       |        |
| QX05                                | A6012010       | Transistor                   | RN2201       |        |
| QX06                                | A6332430       | Transistor                   | 2SC2458-Y    |        |
| QX07                                | A6012010       | Transistor                   | RN2201       |        |
| QX08                                | A6012010       | Transistor                   | RN2201       |        |
| QX09                                | A6002010       | Transistor                   | RN1201       |        |
| D I O D E S                         |                |                              |              |        |
| DG01                                | A8690640       | Diode.LED                    | TLUC163      |        |
| DG02                                | A7160590       | Diode                        | 1SS177       |        |
| DG03                                | A7160590       | Diode                        | 1SS177       |        |

| LOCATION<br>NUMBER  | PART<br>NUMBER | DESCRIPTION      |             |        |
|---------------------|----------------|------------------|-------------|--------|
| DL20                | A8690540       | Diode.LED        | TLUR163     |        |
| DR01                | 23115800       | Diode.Photo      | PH-302      |        |
| DX01                | A7160570       | Diode            | 1SS176      |        |
| DX02                | A7160590       | Diode            | 1SS177      |        |
| DX03                | A7160590       | Diode            | 1SS177      |        |
| DX04                | A7160590       | Diode            | 1SS177      |        |
| DX05                | A7160590       | Diode            | 1SS177      |        |
| DX06                | A7160590       | Diode            | 1SS177      |        |
| DX07                | A7160590       | Diode            | 1SS177      |        |
| DX08                | A7160590       | Diode            | 1SS177      |        |
| DX09                | A7160590       | Diode            | 1SS177      |        |
| DX10                | A7160590       | Diode            | 1SS177      |        |
| DX11                | A7160590       | Diode            | 1SS177      |        |
| DX12                | A7160590       | Diode            | 1SS177      |        |
| DX13                | A7160590       | Diode            | 1SS177      |        |
| DX14                | A7160590       | Diode            | 1SS177      |        |
| DX15                | A7160590       | Diode            | 1SS177      |        |
| DX17                | A7160590       | Diode            | 1SS177      |        |
| DX18                | A7160570       | Diode            | 1SS176      |        |
| DX20                | A8690640       | Diode.LED        | TLUC163     |        |
| DX21                | A8612200       | Diode.LED        | TL0163      |        |
| DX22                | A8605671       | Diode.LED        | TLG113A(FA) |        |
| DX23                | A8690640       | Diode.LED        | TLUC163     |        |
| DX24                | 23118860       | Diode            | 1SS132      |        |
| DX25                | 23118860       | Diode            | 1SS132      |        |
| DX30                | A7109395       | Diode.Zener      | 05Z 3. 9-Y  |        |
| C O I L S           |                |                  |             |        |
| LR01                | 23238722       | Coil.Peaking     | TRF4822A1   |        |
| LR51                | 23232963       | Coil.Variable    | TRF3055     |        |
| C A P A C I T O R S |                |                  |             |        |
| CG01                | 24205479       | Cap.Electrolytic | 4. 7MF      | M 35V  |
| CG02                | 24205479       | Cap.Electrolytic | 4. 7MF      | M 35V  |
| CG03                | 24538153       | Cap.Plastic      | 0. 015MF    | J 50V  |
| CG04                | 24212102       | Cap.Ceramic      | 1000PF      | K 50V  |
| CG05                | 24202101       | Cap.Electrolytic | 100MF       | M 10V  |
| CG06                | 24204330       | Cap.Electrolytic | 33MF        | M 25V  |
| CR01                | 24202330       | Cap.Electrolytic | 33MF        | M 10V  |
| CR02                | 24203100       | Cap.Electrolytic | 10MF        | M 16V  |
| CR03                | 24203100       | Cap.Electrolytic | 10MF        | M 16V  |
| CR04                | 24593222       | Cap.Plastic      | 2200PF      | J 50V  |
| CR05                | 24538683       | Cap.Plastic      | 0. 068MF    | J 50V  |
| CR06                | 24501222       | Cap.Plastic      | 2200PF      | J 50V  |
| CR07                | 24202470       | Cap.Electrolytic | 47MF        | M 10V  |
| CX01                | 24201470       | Cap.Electrolytic | 47MF        | M 6.3V |
| CX02                | 24436330       | Cap.Ceramic      | 33PF        | J 50V  |
| CX03                | 24436330       | Cap.Ceramic      | 33PF        | J 50V  |
| CX04                | 24436220       | Cap.Ceramic      | 22PF        | J 50V  |
| CX05                | 24436330       | Cap.Ceramic      | 33PF        | J 50V  |
| CX06                | 24232103       | Cap.Ceramic      | 0. 01MF     | Z 50V  |
| CX07                | 24232103       | Cap.Ceramic      | 0. 01MF     | Z 50V  |
| CX11                | 24232103       | Cap.Ceramic      | 0. 01MF     | Z 50V  |
| CX12                | 24232103       | Cap.Ceramic      | 0. 01MF     | Z 50V  |
| CX13                | 24232103       | Cap.Ceramic      | 0. 01MF     | Z 50V  |
| CX14                | 24232103       | Cap.Ceramic      | 0. 01MF     | Z 50V  |
| CX15                | 24232103       | Cap.Ceramic      | 0. 01MF     | Z 50V  |
| CX16                | 24232223       | Cap.Ceramic      | 0. 022MF    | Z 50V  |
| CX17                | 24201470       | Cap.Electrolytic | 47MF        | M 6.3V |
| R E S I S T O R S   |                |                  |             |        |
| R951                | 24069705       | Res.Variable     | 5K          |        |
| RG01                | 24366822       | Res.Carbon       | 8. 2K       | J 1/6W |
| RG02                | 24366472       | Res.Carbon       | 4. 7K       | J 1/6W |
| RG03                | 24366303       | Res.Carbon       | 30K         | J 1/6W |
| RG04                | 24366473       | Res.Carbon       | 47K         | J 1/6W |
| RG05                | 24366473       | Res.Carbon       | 47K         | J 1/6W |
| RG06                | 24366472       | Res.Carbon       | 4. 7K       | J 1/6W |
| RG07                | 24366303       | Res.Carbon       | 30K         | J 1/6W |
| RR01                | 24366222       | Res.Carbon       | 2. 2K       | J 1/6W |
| RR02                | 24366100       | Res.Carbon       | 10          | J 1/6W |
| RR03                | 24366562       | Res.Carbon       | 5. 6K       | J 1/6W |
| RR04                | 24366223       | Res.Carbon       | 22K         | J 1/6W |
| RX01                | 24366471       | Res.Carbon       | 470         | J 1/6W |
| RX02                | 24366471       | Res.Carbon       | 470         | J 1/6W |
| RX03                | 24366181       | Res.Carbon       | 180         | J 1/6W |
| RX04                | 24366103       | Res.Carbon       | 10K         | J 1/6W |
| RX05                | 24366103       | Res.Carbon       | 10K         | J 1/6W |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |       |        |
|--------------------|----------------|-------------|-------|--------|
| RX06               | 24366103       | Res. Carbon | 10K   | J 1/6W |
| RX07               | 24366103       | Res. Carbon | 10K   | J 1/6W |
| RX08               | 24366103       | Res. Carbon | 10K   | J 1/6W |
| RX10               | 24366103       | Res. Carbon | 10K   | J 1/6W |
| RX11               | 24366472       | Res. Carbon | 4. 7K | J 1/6W |
| RX12               | 24366473       | Res. Carbon | 47K   | J 1/6W |
| RX13               | 24366334       | Res. Carbon | 330K  | J 1/6W |
| RX15               | 24366102       | Res. Carbon | 1K    | J 1/6W |
| RX16               | 24366683       | Res. Carbon | 68K   | J 1/6W |
| RX17               | 24366224       | Res. Carbon | 220K  | J 1/6W |
| RX18               | 24366181       | Res. Carbon | 180   | J 1/6W |
| RX19               | 24366221       | Res. Carbon | 220   | J 1/6W |
| RX20               | 24366102       | Res. Carbon | 1K    | J 1/6W |
| RX22               | 24366333       | Res. Carbon | 33K   | J 1/6W |
| RX23               | 24366103       | Res. Carbon | 10K   | J 1/6W |
| RX24               | 24366103       | Res. Carbon | 10K   | J 1/6W |
| RX25               | 24366201       | Res. Carbon | 200   | J 1/6W |
| RX26               | 24366102       | Res. Carbon | 1K    | J 1/6W |
| RX27               | 24366102       | Res. Carbon | 1K    | J 1/6W |
| RX28               | 24366102       | Res. Carbon | 1K    | J 1/6W |
| RX29               | 24366102       | Res. Carbon | 1K    | J 1/6W |
| RX30               | 24366103       | Res. Carbon | 10K   | J 1/6W |
| RX31               | 24366103       | Res. Carbon | 10K   | J 1/6W |
| RX32               | 24366103       | Res. Carbon | 10K   | J 1/6W |

#### MISCELLANEOUS

|      |          |                        |
|------|----------|------------------------|
| GX01 | 70113095 | FLP.15FM6              |
| SG01 | 23145532 | Slide Switch.2C3P      |
| SG03 | 23145533 | Slide Switch.2C2P      |
| SG04 | 23145533 | Slide Switch.2C2P      |
| SG05 | 23145533 | Slide Switch.2C2P      |
| SL01 | 23145510 | Push Switch.1C1P       |
| SL02 | 23145510 | Push Switch.1C1P       |
| SL03 | 23145510 | Push Switch.1C1P       |
| SL04 | 23145510 | Push Switch.1C1P       |
| SL05 | 23145510 | Push Switch.1C1P       |
| SL06 | 23145510 | Push Switch.1C1P       |
| SL09 | 23145510 | Push Switch.1C1P       |
| SL10 | 23145510 | Push Switch.1C1P       |
| SL12 | 23145510 | Push Switch.1C1P       |
| SL13 | 23145510 | Push Switch.1C1P       |
| SL14 | 23145510 | Push Switch.1C1P       |
| SL15 | 23145510 | Push Switch.1C1P       |
| SL16 | 23145400 | Push Switch.2C2P       |
| SX01 | 23145510 | Push Switch.1C1P       |
| SX02 | 23145510 | Push Switch.1C1P       |
| SX03 | 23145510 | Push Switch.1C1P       |
| SX04 | 23145510 | Push Switch.1C1P       |
| SX05 | 23145510 | Push Switch.1C1P       |
| SX06 | 23145510 | Push Switch.1C1P       |
| SX07 | 23145510 | Push Switch.1C1P       |
| SX08 | 23145510 | Push Switch.1C1P       |
| SX09 | 23145510 | Push Switch.1C1P       |
| SX10 | 23145510 | Push Switch.1C1P       |
| SX11 | 23145510 | Push Switch.1C1P       |
| SX12 | 23145510 | Push Switch.1C1P       |
| SX13 | 23145510 | Push Switch.1C1P       |
| SX15 | 23145510 | Push Switch.1C1P       |
| SX16 | 23145510 | Push Switch.1C1P       |
| SX17 | 23145510 | Push Switch.1C1P       |
| SX20 | 23145510 | Push Switch.1C1P       |
| XX01 | 23153847 | Resonator.4MHz.TCR1014 |
| XX02 | 23153860 | Crystal.32. 768kHz     |
| ZG01 | 24000711 | Resistor Block.100Kx6  |
| ZG02 | 24000705 | Resistor Block.100Kx12 |

#### MECHANICAL PARTS

|       |          |                    |
|-------|----------|--------------------|
| A101  | 70812668 | Front Panel.DX900  |
| A101  | 70812681 | Front Panel.DX900C |
| A101A | 70391412 | Screw.3x12mm       |
| A101G | 70863813 | Door Assy          |
| A101Q | 70393022 | Push Nut           |
| A101T | 70862773 | Ornament           |
| A101Z | 70881087 | Bottom(PCW)        |
| A102A | 70351746 | Spring             |
| A102B | 70862673 | Stopper            |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION                    |
|--------------------|----------------|--------------------------------|
| A102C              | 70881088       | Button(TV STILL)               |
| A102E              | 70881089       | Button(REW)                    |
| A102F              | 70881090       | Button(PLAY)                   |
| A102G              | 70881091       | Button(FP)                     |
| A102H              | 70881092       | Button(STILL)                  |
| A102J              | 70881093       | Button(STOP)                   |
| A102K              | 70881276       | Button(TV/VCR)                 |
| A104A              | 70824245       | Top Cover                      |
| A104C              | 70391414       | Screw.3x8mm                    |
| A105               | 70863782       | Cassette Door                  |
| A105A              | 70351679       | Spring                         |
| A106               | 70826431       | Knob                           |
| A107               | 70881098       | Knob                           |
| A108               | 70881171       | Knob                           |
| A701               | 70913750       | Case.DX900                     |
| A701               | 70913757       | Case.DX900C                    |
| A702               | 70921223       | Packing(U)                     |
| A703               | 70921224       | Packing(L)                     |
| AT01               | 70108174       | Case(Upper)                    |
| AT02               | 70108175       | Case(Lower)                    |
| AT03               | 70108176       | Case(Battery)                  |
| AT04               | 70108177       | Filter                         |
| B101               | 70321854       | Lever Assy                     |
| B101L              | 70391342       | Screw.2x4mm                    |
| B101M              | 70351689       | Spring                         |
| B104               | 70396193       | Washer.FI 2. 6x6x 0. 5mm       |
| B111               | 70323310       | Pinch Roller Assy              |
| B112               | 70396196       | Washer.FI 3. 6x8x 0. 5mm       |
| B113               | 70396193       | Washer.FI 2. 6x6x 0. 5mm       |
| B121               | 70328319       | Tension Lever Assy             |
| B126               | 70351747       | Spring                         |
| B127               | 70325029       | Band Brake assy                |
| B128               | 23721310       | Screw.3x10mm                   |
| B203A              | 70391157       | Screw. 2. 6x5mm                |
| B204A              | 70391157       | Screw. 2. 6x5mm                |
| B209               | 23723308       | Screw.3x8mm                    |
| B210               | 70391081       | Screw.4x12mm                   |
| B231               | 70321858       | Earth Brush Assy               |
| B232               | 70391345       | Screw.3x3mm                    |
| B401G              | 70351634       | Spring                         |
| B402               | 70391368       | Screw                          |
| B405               | 70322354       | T Slider Sub Assy              |
| B406               | 70391361       | Screw. 2. 6x3mm                |
| B407               | 70322353       | S Guide Roller Assy            |
| B407E              | 70378598       | Screw                          |
| B411G              | 70351635       | Spring                         |
| B412               | 70391368       | Screw                          |
| B416               | 70391361       | Screw. 2. 6x3mm                |
| B417               | 70353115       | O-ring                         |
| B418               | 70353115       | O-ring                         |
| B420               | 70322378       | T Guide Roller Assy            |
| B420E              | 70378598       | Screw                          |
| B501               | 70368130       | Ring Guide Roller(L1)          |
| B501A              | 70368131       | Ring Guide Roller(L2)          |
| B502               | 70368129       | Ring Guide Roller(U)           |
| B503               | 70396196       | Washer.FI 3. 6x8x 0. 5mm       |
| B504               | 70333198       | Loading Ring Gear(A)           |
| B506               | 70333199       | Loading Ring Gear(B)           |
| B507               | 70368116       | Double Cap                     |
| B509               | 70391334       | Screw.3x8mm                    |
| B513               | 70333195       | Gear                           |
| B515               | 70333196       | Loading Drive Gear             |
| B516               | 70351676       | Spring                         |
| B521               | 70347034       | Polislider 4. 1x 6. 5x 0. 50mm |
| B525               | 70396193       | Washer.FI 2. 6x6x 0. 5mm       |
| B526               | 70323304       | Cam Lever                      |
| B527               | 70368122       | Stopper                        |
| B535               | 70351683       | Spring                         |
| B539               | 70351631       | Spring                         |
| B541               | 70396193       | Washer.FI 2. 6x8x 0. 5mm       |
| B542               | 70363305       | Lever                          |
| B550               | 70312205       | Loading Drive Assy             |
| B553               | 70396064       | Washer.5. 0x 2. 1x 0. 5mm      |
| B554               | 70351641       | Spring                         |
| B555               | 70351675       | Spring                         |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION                    |
|--------------------|----------------|--------------------------------|
| B556               | 70312193       | Loading Motor Assy             |
| B556B              | 70125222       | DC Motor                       |
| B557               | 23723264       | Screw. 2. 6x4mm                |
| B558               | 70342123       | Belt                           |
| B562               | 70396191       | Washer.FI 2. 1x5x 0. 5mm       |
| B565               | 70333197       | Cam Gear                       |
| B566               | 70396193       | Washer.FI 2. 6x6x 0. 5mm       |
| B571               | 70391334       | Screw.3x8mm                    |
| B604               | 70391358       | Screw.4x12mm                   |
| B607A              | 70391081       | Screw.4x12mm                   |
| B607B              | 70391048       | Screw.3x6mm                    |
| BM31               | 70125224       | Capstan Motor Assy             |
| DE01               | 70115406       | Diode.LED GL450V               |
| G001               | 70311350       | Cylinder Assy.C4SRA6N          |
| G101               | 70325006       | Upper Cylinder Assy            |
| G101A              | 70391364       | Screw                          |
| G103               | 70321601       | Ground Cap Assy                |
| G130A              | 23712011       | Screw. 2. 6x8mm                |
| G154               | 70391372       | Screw                          |
| G155               | 23731306       | Screw.3x5x6mm                  |
| G202               | 70322372       | Lever Assy                     |
| G204               | 70391351       | Screw. 2. 6x8mm                |
| G205               | 70346035       | Impedance Roller               |
| G206               | 70396050       | Washer.3. 9x 2. 1x 0. 5mm      |
| G207               | 70396190       | Washer.FI 1. 6x6x 0. 5mm       |
| G209               | 70351694       | Spring                         |
| G210               | 70351662       | Spring                         |
| G211               | 70378512       | Flange                         |
| G212               | 70378511       | Sleeve                         |
| G213               | 70393025       | NUT. 3x3mm                     |
| G217               | 70378515       | Flange                         |
| G218               | 70378511       | Sleeve                         |
| G220               | 70393025       | NUT. 3x3mm                     |
| G221               | 70368134       | Guide Cap                      |
| G230               | 70378601       | Shaft                          |
| G231               | 70351665       | Spring                         |
| G232               | 23002250       | E-ring                         |
| G233               | 23712308       | Screw. 3x0. 5x8mm              |
| G234               | 70391322       | Adjust Screw                   |
| G236               | 70351666       | Spring                         |
| G237               | 70393026       | Nut. 3x4. 5mm                  |
| G239               | 70392015       | Taper Nut                      |
| H002A              | 70391440       | Screw.3x10mm                   |
| H003A              | 70391440       | Screw.3x10mm                   |
| H032               | 70183018       | FE Head                        |
| H041               | 70184009       | CUE Head                       |
| HH91               | A6090130       | Hall Sensor THS103A            |
| HH92               | A6090130       | Hall Sensor THS103A            |
| K102               | 70326571       | Reel Motor Assy                |
| K102E              | 70391353       | Screw.3x4mm                    |
| K103               | 70391334       | Screw.3x8mm                    |
| K104               | 70391345       | Screw.3x3mm                    |
| K110               | 70326538       | Idler Assy                     |
| K114               | 70351677       | Spring                         |
| K114B              | 70396221       | Polyslider.5. 1x 8. 8x 0. 13mm |
| K115               | 70351703       | Spring                         |
| K116               | 70396224       | Polyslider.3. 6x 7. 5x 0. 5mm  |
| K118               | 70391447       | Screw. 2. 6x3mm                |
| K130               | 70316141       | S Sensor Assy                  |
| K131               | 23721312       | Screw.3x12mm                   |
| K132               | 70316142       | T Sensor Assy                  |
| K133               | 23721312       | Screw.3x12mm                   |
| K151               | 70317040       | S Reel Table Assy              |
| K151C              | 70351521       | Spring                         |
| K152               | 70338075       | Bearing                        |
| K153               | 70394153       | Spacer                         |
| K155               | 70396193       | Washer.FI 2. 6x6x 0. 5mm       |
| K156               | 70363300       | Lever                          |
| K157               | 70351700       | Spring                         |
| K161               | 70317039       | T Reel Table Assy              |
| K161C              | 70351521       | Spring                         |
| K162               | 70338100       | Spacer                         |
| K163               | 70394153       | Spacer                         |
| K165               | 70396193       | Washer.FI 2. 6x6x 0. 5mm       |
| K166               | 70326535       | Lever Assy                     |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION                   |
|--------------------|----------------|-------------------------------|
| K167               | 70351685       | Spring                        |
| K169               | 70326533       | Reverse Brake Assy            |
| K170               | 70351706       | Spring                        |
| K181               | 70326536       | S Brake Assy                  |
| K185               | 70326537       | T Brake Assy                  |
| K190               | 70351684       | Spring                        |
| K301               | 70314245       | Front Loading Assy            |
| K301A              | 70391049       | Screw.3x8mm                   |
| K305               | 70396151       | Washer.FI 2. 6                |
| K306               | 70351680       | Spring                        |
| K310               | 23723204       | Screw.2x4mm                   |
| K312               | 70348167       | Guide Roller(A)               |
| K313               | 70348169       | Guide Roller(C)               |
| K315               | 70333201       | Gear(L)                       |
| K318               | 70351681       | Spring                        |
| K319               | 70396187       | Washer.FI 3. 6x12x0. 5mm      |
| K320A              | 23723305       | Screw.3x5mm                   |
| K321C              | 23723310       | Screw.3x10mm                  |
| K322               | 70333203       | Gear                          |
| K322A              | 70396195       | Washer.FI 3. 6x6x 0. 5mm      |
| K323               | 70324321       | Worm Gear Assy                |
| K323C              | 70396152       | Washer.FI 1. 6                |
| K323D              | 70396050       | Washer.3. 9x 2. 1x 0. 5mm     |
| K324               | 70324345       | Motor Assy                    |
| K324B              | 23723265       | Screw. 2. 6x5mm               |
| K327               | 70338073       | Bearing                       |
| K328A              | 23723264       | Screw. 2. 6x4mm               |
| K331A              | 23723265       | Screw. 2. 6x5mm               |
| K334               | 23723264       | Screw. 2. 6x4mm               |
| K335               | 23723205       | Screw. 2. 5x5mm               |
| K336               | 23723206       | Screw.2x6mm                   |
| K339               | 23723206       | Screw.2x6mm                   |
| M005               | 70125222       | DC Motor                      |
| M101               | 70125216       | Stator                        |
| M101A              | 70391378       | Screw.2x3mm                   |
| M102               | 70125217       | Rotor                         |
| M102A              | 70391376       | Screw                         |
| P101               | 23367198       | Plug.7P                       |
| △P801              | 23176709       | Power Cord.125V.10A           |
| △P801A             | 70846155       | Cord Holder                   |
| △P802              | 23116476       | AC Socket.2P                  |
| P990A              | 70391440       | Screw.3x10mm                  |
| P991A              | 70391440       | Screw.3x10mm                  |
| PT01               | 70108191       | Terminal                      |
| PT02               | 70108192       | Terminal                      |
| PT03               | 23309485       | Terminal                      |
| Q803A              | 70391381       | Screw.2.3x6mm                 |
| Q804A              | 70391381       | Screw.2.3x6mm                 |
| QM50               | 70114347       | Transistor.Photo PN202S-S     |
| QM51               | 70114345       | Transistor.Photo PN202S-R     |
| RC01               | 70213108       | Dew Heater                    |
| S992               | 23145486       | Leaf Switch                   |
| S993               | 23145487       | Leaf Switch                   |
| S994               | 23145485       | Leaf Switch                   |
| S995               | 23145484       | Leaf Switch                   |
| S996               | 23145565       | Leaf Switch                   |
| ST01               | 70108178       | Rubber                        |
| ST02               | 70108179       | Rubber                        |
| △T801              | 23213592       | Transformer.TPW1396AM         |
| U002A              | 72471082       | Screw.3x10mm                  |
| U190A              | 70391434       | Screw. 2. 6x6mm               |
| U190B              | 70391377       | Screw. 2. 6x 0. 45x7. 4mm     |
| U202A              | 72471082       | Screw.3x10mm                  |
| U902A              | 72471082       | Screw.3x10mm                  |
| UG02A              | 72471082       | Screw.3x10mm                  |
| UG11A              | 72471082       | Screw.3x10mm                  |
| UT01               | 23333369       | P C Board Assy.Remote Control |
| UU11B              | 70391048       | Screw.3x6mm                   |
| UX01A              | 72471082       | Screw.3x10mm                  |
| V251A              | 70391049       | Screw.3x8mm                   |
| V592               | 70845036       | Clamper                       |
| V592A              | 72471081       | Screw.3x8mm                   |
| V802A              | 72471081       | Screw.3x8mm                   |
| V802C              | 70391355       | Screw.3x8mm                   |
| V802D              | 70391081       | Screw.4x12mm                  |



| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION               |
|--------------------|----------------|---------------------------|
| V802E              | 72471081       | Screw.3x8mm               |
| V802F              | 70391081       | Screw.4x12mm              |
| VE02               | 70851562       | Shield Cover              |
| VE03               | 70851563       | Shield Cover              |
| VE05A              | 23772306       | Screw. 3x0. 5x6mm         |
| VN01C              | 72471082       | Screw.3x10mm              |
| VV04               | 70391349       | Screw. 2. 6x3mm           |
| W951A              | 70391049       | Screw.3x8mm               |
| WE52A              | 72471082       | Screw.3x10mm              |
| Y101               | 70941838       | Owners Manual.DX900       |
| Y101               | 70941844       | Owners Manual.DX900C      |
| Y102               | 70942463       | Dew Caution Sheet         |
| Y103               | 70948053       | Warranty Card.DX900       |
| Y103               | 70948233       | Warranty Card.DX900C      |
| Y104               | 70942504       | Quick Card(Timer).DX900   |
| Y104A              | 70942504       | Quick Card(Timer).DX900C  |
| Y104B              | 70942506       | Quick Card(Timer).DX900C  |
| Y106               | 70946065       | Safety Instruction.DX900  |
| Y107               | 23293974       | Matching Trans.DX900      |
| Y107               | 23363475       | J-J Cable.DX900C          |
| Y108               | 23363476       | Flat Cable.300 OHM        |
| Y118               | 23293982       | Matching Trans.ADB-AD909F |
| Y121               | 70933070       | Cover                     |
| Y125               | 23367082       | Pin Cable                 |
| Y130               | 70382019       | Light Pen                 |
| Y140               | 70148244       | Remote Control Unit       |
| ZG01               | 70320158       | LED Bracket               |
| ZG01A              | 23712306       | Screw.3x0.5x6mm           |
| ZT01               | 23109327       | CSB455E 455KHZ-2KHZ-200HM |

| LOCATION<br>NUMBER | PART<br>NUMBER | DESCRIPTION |
|--------------------|----------------|-------------|
|--------------------|----------------|-------------|